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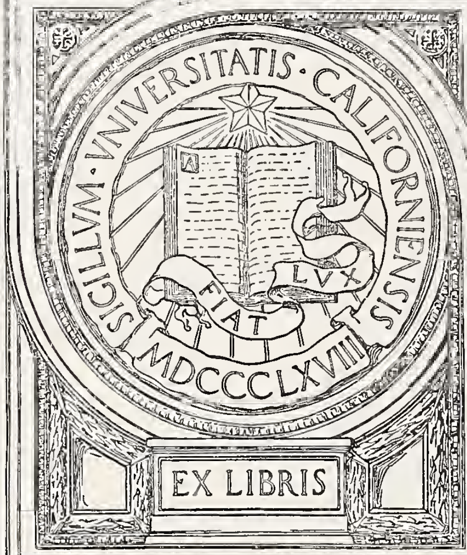

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MINNESOTA MEDICINE

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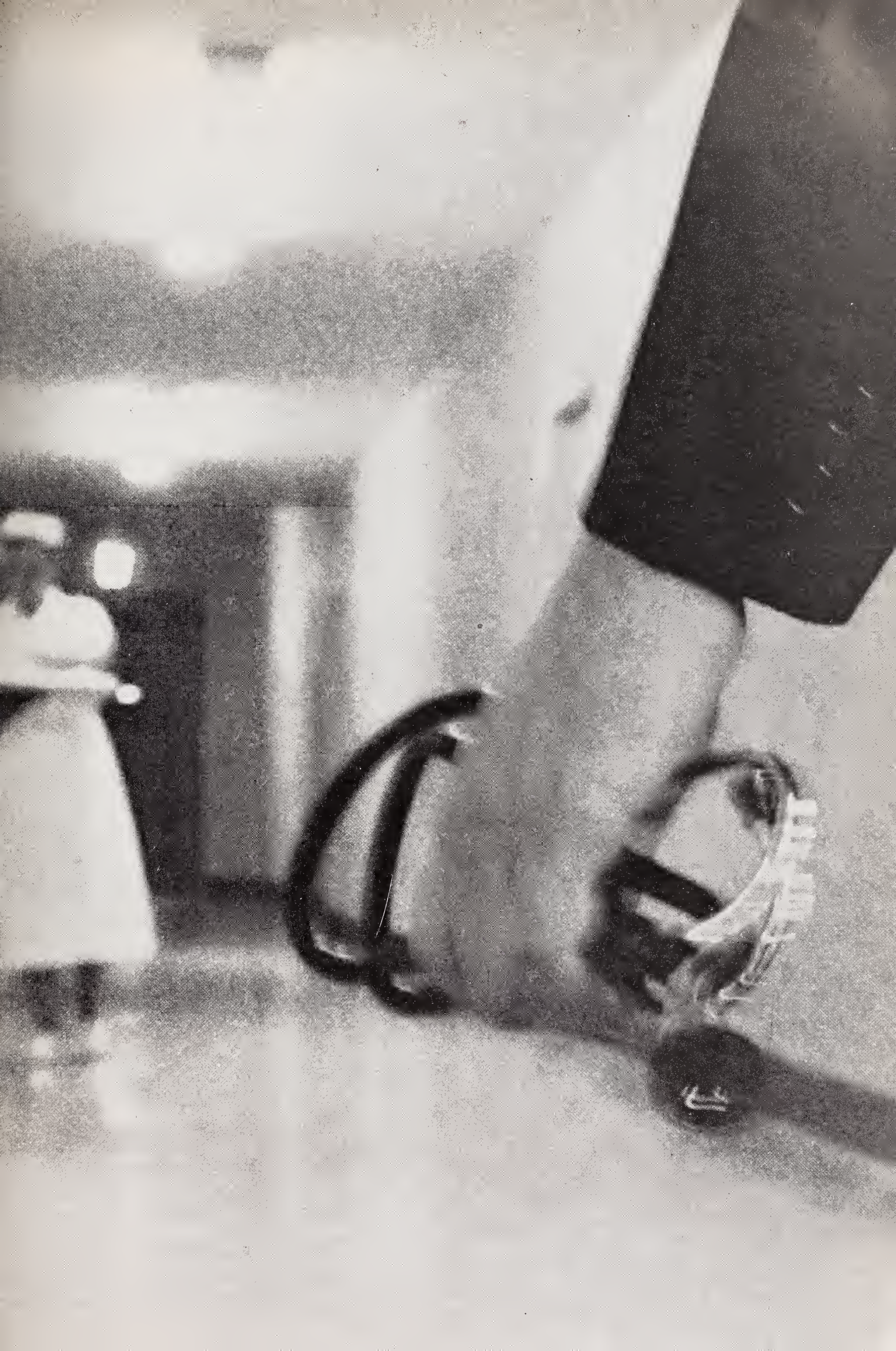

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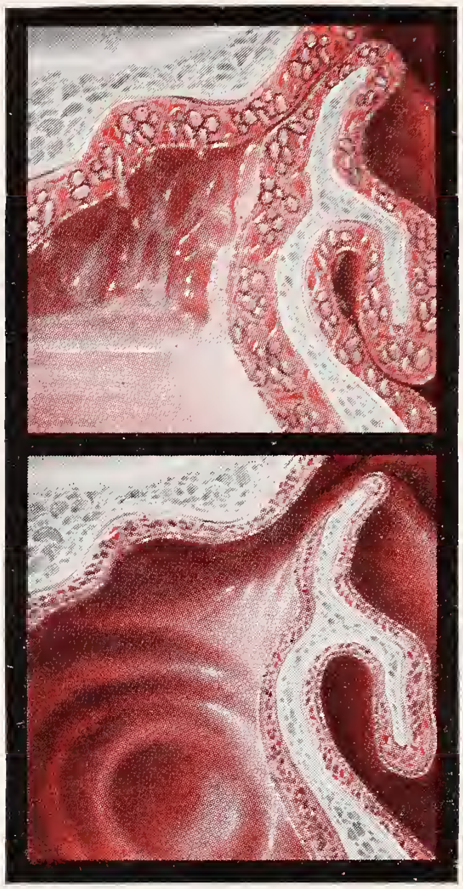

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A New Format

MINNESOTA MEDICINE takes on a new appearance with this issue. We have adopted a new format. No longer will it be necessary to leaf through nearly one-third of your journal before you come to the scientific section.

In response to your comments, we have moved the scientific section to the front of the book. Each month this section will begin on the fifth right-hand page and run continuously without interruption. It will be prefaced by a few scattered ads, the contents pages, the page devoted to publishing and author's information, and the President's Letter, which will appear regularly in place of this explanatory page.

Following the purely scientific section, all right-hand pages will be dedicated to special articles, medical-economic news and the regular monthly features: Abstracts and Briefs, Book Reviews, Editorials, Art of Medicine, Blue Shield, Meetings and Announcements, In Memoriam and Physician's Diary.

Advertising will appear only on left-hand pages, with few exceptions. Half advertising and half editorial pages will be discontinued where possible.

Among other things, this new format will assure you, the reader, of a ratio of 60 percent editorial materials to 40 percent advertising. It will also benefit our advertisers by providing proximity to reading material.

The pages of MINNESOTA MEDICINE will no longer be numbered in the dual alphabetical and Arabic systems. Beginning with page one in this issue, the pages will be numbered consecutively through to the last page of the December issue.

MINNESOTA MEDICINE will wear a new cover, a further step by your Board of Editors to add to your convenience. Using white space to emphasize its modern design, the new cover will highlight the titles of articles appearing in each issue. A timely photograph or drawing will also be used each month.

Finally, the new cover has blue as its standard second color. It is hoped that MINNESOTA MEDICINE's new cover will not only be attractive, but also help you, month after month, to quickly pick out your copy.

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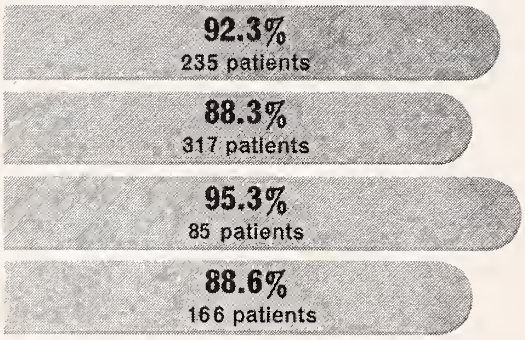

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THIORIDAZINE in Short-Term Treatment of Acute Psychiatric Disorders

Table I
Sample Distribution by Diagnostic Categories

Disorder	Experimental	Comparison	Total
Neurotic	27 (51.92%)	18 (52.94%)	45 (52.33%)
Psychotic	22 (42.31%)	15 (44.12%)	37 (43.02%)
Personality	3 (5.77%)	1 (2.94%)	4 (4.65%)
Total	52 (60.47%)	34 (39.53%)	86

Table II
Sample Distribution by Sex

	Experimental	Comparison	Total
Male	11 (21.15%)	9 (26.47%)	20 (23.26%)
Female	41 (78.85%)	25 (73.53%)	66 (76.74%)
Total	52 (60.47%)	34 (39.53%)	86

The authors have evaluated a new drug for use as a tranquilizer in psychiatric problems.

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The purpose of this study was to compare the effects of Thioridazine (Mellaril) with other major and minor tranquilizers, particularly with their capacity to reduce depression, anxiety, and associated psychosomatic symptoms, among hospitalized patients who were treated in a private practice setting. Additional comparisons were made of observed side-effects, and global measures of treatment, such as the number of days hospitalized, the necessity for electroconvulsive therapy, and the final disposition after treatment.

A review of the literature indicates that most authors were impressed with the low incidence of side-effects associated with the use of this drug. Kinross-Wright[1] in his paper stated, "The most striking aspect of Thioridazine therapy is the poverty of side-effects." There appears to be general agreement among the other investigators of this drug that, given in adequate doses, it is at least as effective as other phenothiazines.[2] Several investigators called attention to the fact that this drug was particularly effective in treatment of psychosomatic disorders[1,2,3].

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Description of Sample

Patients were alternately assigned either to the Thioridazine group or to the group which received tranquilizers ordinarily prescribed by the psychiatrists in private practice. The only restriction on this latter group was that any tranquilizer prescribed should not be another "experimental" medication. Any patient who, at the outset of treatment, received electroconvulsive therapy was excluded from the study. There were, however, a number of patients who were retained in this study for whom electroconvulsive therapy was prescribed at a later date. The final sample consisted of 52 patients in the experimental group, and 34 patients in the comparison or control group. All therapeutic decisions, pertaining to patients in either group, were made in the manner usually practiced in the treatment of hospitalized patients. Thus, the sole difference between the two groups, from ordinary clinical practice, was specifically in the type of medication prescribed. A detailed comparative description of the two groups in the sample is contained in Tables I through IV. Of the variables contained in the description of the sample, there were no statistically significant differences in sex, age, marital status, and diagnosis. The major discrepancy in the size of the two groups was due to occasional failure, on the part of the psychiatrists, to record the information concerned in rating the patients, on a periodic basis.

Table III
Sample by Mean Age and Sex Description

	Experimental (N=52)	Comparison (N=34)	Total (N=86)
Male	36.36	33.89	35.25
Female	43.46	39.0	41.77
Total	41.96	37.65	40.25

Table IV
Sample Distribution by Marital Status

Status	Experimental No. Pts. %	Comparison No. Pts. %	Total Pts. %
Single	10 (19.23%)	7 (20.59%)	17 (19.77%)
Married	30 (57.69%)	21 (61.76%)	51 (59.31%)
Widowed	11 (21.16%)	4 (11.76%)	15 (17.43%)
Divorced	1 (1.92%)	2 (5.89%)	3 (3.49%)
Total	52 (60.47%)	34 39.53%)	86 (100%)

Table V
Type and Dosage of Tranquilizer for the Comparison Group

Drug Type	No. of Pts.*	Daily Dosage (mgm.)	Mean Daily Dosage (mgm.)
Promazine	13	100-800	242
Prochlorperazine	11	15-75	49
Meprobamate	6	800-1600	1267
Chlorpromazine	4	200-400	225
Trifluoperazine	2	20	20
Thiopropazate	2	20-30	25
Triflupromazine	1	100	100
Mepazine	1	200	200
Perphenazine	1	6	6
None	3	------	------
Total	44		

* Some patients received more than one tranquilizer, so that the total number of patients in this column (44) exceeds the number of patients (34) in the comparison group.

Table V presents a detailed analysis of the type and dosage of tranquilizers which were administered to the comparison group; whereas, all of the patients in the experimental group received only the experimental drug. In employing the Students-t test of significance of difference, there was no statistically significant difference at the 5% level of confidence, in any of these variables; and, therefore, it might be said that, on a frequency basis, the groups were equated.

Methodology

The data for comparison of the two groups was obtained through the use of two instruments: a check list pertaining to the presence or absence of psycho-physiological symptoms and various organ systems; and one check list indicating the presence or absence of depressive and anxiety symptoms, such as psychomotor retardation, "future looks black," insommia, etc. In addition, two additional instruments were utilized: One, pertaining to a measurement of anxiety; and the other, to a measurement of depression. These were ratings on 6-point scales, with the frame of reference for the average range being that of patients usually seen in the hospital for psychiatric treatment. Thus, ratings of 3 or 4 would include the average range of hospitalized, psychiatric patients. A rating of 1 would refer to the lowest point; and a rating of 6 would refer to the highest point. For example, on the anxiety rating scale, anxiety was the broad term, with tension, nervousness, apprehension, agitation, etc. taken as specific manifestations of anxiety. The lowest rating of 1 would be given to patients who showed only minimal indication of anxiety or depression, such as would be present in well-functioning conversion hysteria or compulsive personality. The highest rating of 6 was indicative of an extremely anxious individual, as in the case of severe anxiety-neurotics or borderline psychotic conditions, in which the presence of anxiety approached panic proportions. The results of these ratings are presented in Tables VI, VII and VIII.

Table VI
Mean Scores—Anxiety and Depression Scales

Rating Scale	Experimental (N=50)*			Comparison (N=34)		
	Start	End	Improvement	Start	End	Improvement
Anxiety	4.18	2.90	1.28	4.09	2.29	1.80
Depression	4.18	2.62	1.56	4.03	1.97	2.06

* 2 patients not rated.

Table VII
Mean Duration Days of Psychophysiological Symptoms

Class Symptoms	Experimental (N=52)		Comparison (N=34)	
	Mean Duration Days	No. Pts.	Mean Duration Days	No. Pts.
Cardiovascular	6.55	11	13.60	5
Gastrointestinal	7.59	22	13.42	7
Musculoskeletal	7.44	18	14.0	12
Skin	5.0	4	29.0	1
Other	4.71	7	12.33	3

Table VIII
Mean Duration Days of Depression—Anxiety Symptoms

Class Symptoms	Experimental (N=52)		Comparison (N=34)	
	Mean Duration Days	No. Pts.	Mean Duration Days	No. Pts.
Psychomotor Retardation	6.47	36	9.67	24
Future "Looks Black"	6.09	32	7.75	20
Insomnia	5.76	42	6.50	26
Concentration Difficulties	8.21	39	9.36	25
Interests Have Narrowed	9.26	42	8.52	21
Loss of Libido	8.60	25	5.67	9
Weight Loss	5.96	25	4.57	14
Suicidal Ruminations	3.55	20	4.00	14
Suicidal Intent	2.00	6	3.00	2

The final group of additional criteria in comparison of the two groups included whether or not electronconvulsive therapy was used: if electroconvulsive therapy was used, the number of treatments given, the number of days of hospitalization during treatment, and the final disposition, such as discharged to home or transfer to a state hospital.

Among the various criteria used, the test of significance indicated a significant difference (P =.05) in the two groups on psychomotor retardation, indicating a more rapid improvement in the experimental group than in the comparison group. In addition, it may be noted that the experimental group had a much shorter duration of psycho-physiological symptoms. Since the various classes of symptoms indicative of psychomotor retardation and the psycho-physiological symptoms cannot be considered as independent events, there was no formal way of determining the significance of this trend other than to acknowledge that it existed. There was a slight, but insignificant, difference in favor of the comparison group in improvement in both anxiety and depression during the period of study.

There were no statistically significant differences found between the experimental and comparison groups in the mean number of days hospitalized (Table IX), the mean number of days on medication, the number of patients receiving electroconvulsive therapy, the mean number of electroconvulsive treatments given (Table X), and the disposition at the time of discharge (Table XI).

Table IX
Mean Days Hospitalized During Treatment
and Days on Medication

	Experimental (N=52)	Comparison (N=34)	Total (N=86)
Days in Hospital	29.15	28.67	28.96
Days on Medication	15.62	17.35	16.30

Discussion and Summary

Three measuring devices, employed for this evaluation, show a trend favoring the experi-

Table X
Number of Patients and Number of Treatments of ECT Received During Study

	Experimental	Comparison	Total
Number of Patients	24 (54.54%)	20 (45.46%)	44
Mean Number ECT	10.58	7.75	9.30

Table XI
Discharge Disposition

	Experimental	Comparison	Total
Own Home	49 (94.23%)	31 (91.18%)	80 (93.02%)
Psychiatric Hosp.	3 (5.77%)	3 (8.82%)	6 (6.98%)
Total	52 (60.47%)	34 (39.53%)	86

mental group on the check list of psycho-physiologic symptoms and improvement of psychomotor retardation, whereas there was a trend favoring the comparison group on the anxiety-depression rating scales, with no appreciable difference in the miscellaneous criteria. There was only one statistically significant difference found in the entire study, and that was in the area of psychomotor retardation. It indicated that the Thioridazine group showed more rapid and more complete recovery from these symptoms. The general conclusion that might be drawn from these findings is that Thioridazine is at least as effective as other tranquilizers. As previously mentioned in this paper, early investigators were of the impression that Thioridazine is of value in the treatment of a patient who has psychosomatic overlay and manifestations in various target organs, such as the gastrointestinal tract, cardiovascular system, etc. The results of this study seem to corroborate this impression, in that patients on Thioridazine showed a consistent trend toward a more complete and more rapid reduction of psycho-physiological symptoms during the period of treatment. With reference to side-reactions, our findings concurred with findings of other investigators, in that there was a marked paucity of side-reactions and, when noted, these were of a very mild nature, such as slight dryness of the mouth and drowsiness. In no instance was it necessary to terminate administration of the drug because of side-effects.

Conclusions

(1) Thioridazine was found to be at least as effective as the other drugs with which it was compared in this study.

(2) The only statistically significant difference between Thioridazine and the comparison drugs was found to be in the superiority of Thioridazine in the treatment of psychomotor retardation.

(3) A consistent trend was found for a more rapid reduction of psycho-physiologic symptoms by Thioridazine.

(4) Thioridazine was uniformly well tolerated by the patients in our study.

Thioridazine was furnished for this study by the Sandoz Company, and is now available as Mellaril.

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Our facts must be correct. Our theories need not be if they help us discover important new facts.—Hans Selye

A pilot study is here reported demonstrating the value of county cooperation in the management of sociological problems. This probably would be helpful to many county-areas in the State of Minnesota.

The Four-County Project for Retarded Children

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The Four-County Project for Retarded Children is a community demonstration project located in Fergus Falls, Minnesota and serves retarded minors in four primarily rural counties of western Minnesota (Becker, Clay, Otter Tail and Wilkin). It was established in 1957 by joint cooperation of the Minnesota Departments of Health

The professional staff is as follows: Medical Director, Pediatric Consultant, Associate Director Clinical Psychologist, Public Health Nurse, and Social Worker. Whenever possible, consultative and laboratory services within the community are utilized.

and Welfare and is financed by a grant from the United States Children's Bureau.

Project activities are centered in three areas: case finding, providing evaluative services, and helping to develop local community facilities for the retarded. In an attempt to find retarded children in the area, existing agencies and professional persons are requested to report the names of persons under twenty-one years of age who are thought to be retarded. From an initial 143 such names known to the county welfare offices, the list has now grown to include 1000 names. The minor population of this area is approximately 45,000. This, therefore, represents a reported incidence of 2.2 % retardation.

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Read before the Northwestern Pediatric Society, September 23, 1960.

The evaluative service consists of an intake interview by public health nurse or social worker, psychological evaluation, pediatric history and examination, and laboratory studies which routinely include chest and skull x-rays, C.B.C., urinalysis and urine test for phenylketonuria. Often electroencephalography is obtained. Evaluation is followed by a parent conference and later re-evaluation, public health nursing services, or follow-up interviews may be planned. Consistent with the belief that the family physician is a most important figure in planning for the retarded, the physician(s) designated by each family is sent a summary of studies and recommendations. Selected reports are sent to schools and to other appropriate agencies when indicated. Medical diagnostic services of the project are planned as a screening device to indicate areas in which further study should be directed and families are advised to return to the child's physician to discuss projects findings and recommendations.

By December 31, 1959, 264 children had been seen for evaluation. Of this number, 162 or 61% were considered to be mentally retarded: they functioned as retarded in the community, their I.Q.'s were within the usual prescribed limits, and they showed no definite evidence of disorders which could produce this picture without mental retardation. Most of the remaining 102 or 39% were in some way functioning as retarded, but other factors were involved: emotional disturbances, sensory defects, and defective speech were prominent among these factors.

The 162 cases of mental retardation may be classified as follows:[1]

Familial	4
Celebral birth trauma	8
Postnatal cerebral infection	6
Mongolism	26
Cranial Anomalies	1
Phenylketonuria	1
Congenital Ectodermoses	2
Cerebral Palsy	3
Due to prenatal infections of mother	2
Cong. Cer. Mald. Other forms	3
Hypothyroidism	1
Kernicterus	2
Due to convulsive disorders	2
Psychogenic	19
Other postnatal forms	8
Unknown	55
Unclassified	19
Total	162

That the 264 "referred retarded" seen for evaluation present a variety of handicapping conditions may be illustrated by the following disorders noted:

Eye defects (apart from refractive error alone)	64
Hearing defects	15
Seizures	40
Emotional Disturbance (severe)	72

Of the 113 children seen for dental studies, 48% had malocclusions indicating a need for orthodontic service.[2]

While mental retardation is difficult therapeutically, and only in occasional cases can the course of the underlying disease be significantly altered, it is also true that correction of contributing factors can effectively improve the level of function of retarded persons,[3] and will dramatically change the course of events in many cases of pseudoretardation.

Development of community facilities is an important part of any overall program for the retarded, inasmuch as only about ten per cent of the retarded can plan to find institutional space and a large proportion of the retarded can become partially or completely self-supporting provided that training and supervision are given them.[4,5] To facilitate the development of community resources, an advisory board has been formed in each of the four counties. Each board studies the needs of its own county, makes recommendations and assists interested groups to implement these recommendations. There has been development of community facilities in at least the following areas: twenty-two public school classes for retarded children, extension and specialization of social casework services, establishment of two new county chapters of the Association for Retarded Children and formation of a Boy Scout troop. In addition, a sheltered workshop is in the planning stage, and the teacher training program at Moorhead State College has been broadened. Undoubtedly, many of these facilities would have developed without help of advisory board or project, but it is believed that their development has been expedited.

Evaluation of community services for the retarded must include an evaluation of the availability of medical and related services. The four-county area is served by 79 resident licensed physicians, two of whom are members of an organized pediatric society. The physician to population ratio is approximately 1:1500. There has been some increase of medical specialty services since 1957 which appears comparable to that occurring in many rural and semi-rural areas. Physical therapy services have developed in three hospitals since 1957. In addition, two hospitals are developing hospital dental services which will permit in-patient dental care.

Summary

The findings of a community demonstration project in mental retardation have been presented as has the development of services for the retarded in the area served by the project. It is thought by many that this is a representative upper midwest rural community and that information obtained from this project may be applicable to many communities in nearby areas.

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NIELSEN'S SYNDROME

(Neuro-muscular exhaustion syndrome)

This syndrome is manifested by profound weakness, physical exhaustion, muscular atrophy, and fascicular twitching, after extreme overwork. It was first described by Nielsen in 1940.

These symptoms occur in persons who engage in excessive muscular activity, to the point of complete exhaustion. During this period they become euphoric and totally oblivious to their fatigued state. Psycho-motor restlessness then ensues and the patient is unable to relax or rest for several days. There may be pharyngeal and extra-ocular muscle paralysis and paralysis of the diaphgram. Large muscles become tender and are subject to cramps and develop fascicular twitching. As atrophy occurs, the deep reflexes disappear and market atony becomes evident and paralysis may supervene. The muscles which are used the most are the ones which become involved with the pathologic changes.

The onset of this syndrome is rapid, but the recovery is slow and rarely complete. Exacerbation may occur after excessive muscular effort.

Treatment consists of symptomatic management, sedation, rest, vitamins, glycine, and an adequate diet.

Nielsen, J. JAMA 126:801 1944

Obstetrical mortality statistics are being carefully collected and evaluated in the state of Minnesota. By means of a confidential reporting system important data is accumulated for the benefit of all practicing physicians. The authors present an analysis of some of this early data.

Maternal Morbidity Data

Accurate statewide data on obstetric mortality has been available during the past decade as a result of studies carried out by the maternal mortality committee of the Minnesota State Medical Association. There has been little or no data available on obstetric morbidity except for limited studies in individual hospitals. To make it possible to obtain current data relating to the complications of pregnancy, labor and delivery a detachable confidential medical report was attached to the revised fetal death certificate in Minnesota, beginning late in 1958, after approval by the Minnesota State Medical Association.[1] A similar confidential section will shortly be added to the live birth certificate which is now under revision. Included also will be a change in the position of the items of color or race of mother and father which will not be reproduced on a certified copy of the birth certificate.

A total of 87,200 live births and 1,184 fetal

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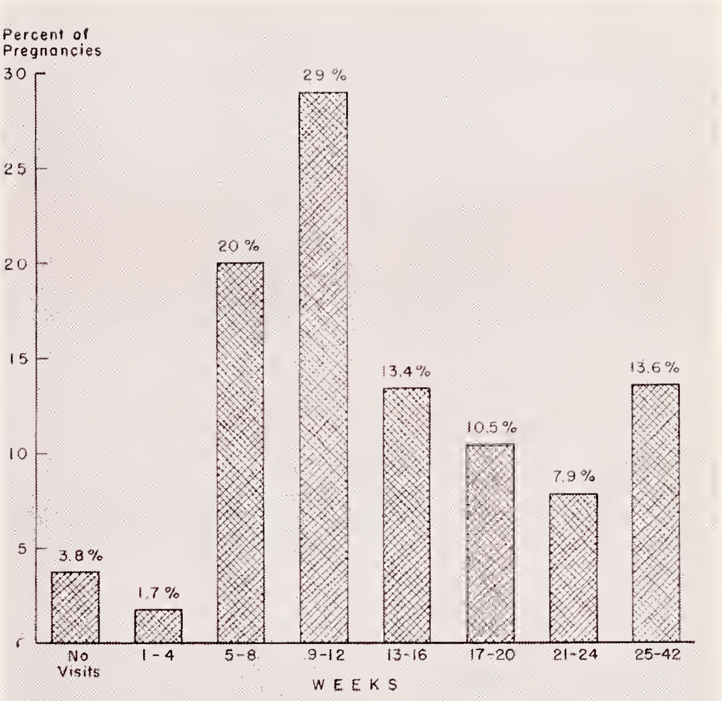

Figure 1 Weeks pregnant before first visit to physician in 580 fetal deaths reported.

from Fetal

Death Certificates

deaths occurred in Minnesota in 1959. This is a ratio of 13.6 fetal deaths per 1,000 live births. The revised fetal death record was not used by all physicians for the full year because old forms were still available. As a result the 877 confidential medical reports filed with the Section of Maternal and Child Health of the Minnesota Department of Health represent only 74.1% of the total fetal deaths. The information contained in these reports has been coded and punched into cards for mechanical analysis. The results of this study are briefly discussed under the headings listed on the medical report.

Complications Related to Pregnancy

Of the 877 fetal deaths under consideration, 372 or 42.4% of the mothers were reported to have complications related to pregnancy. Because in some pregnancies there was more than one complication there was a total of 484 conditions mentioned (Table I). In one-fifth (20.6%) of these pregnancies complications were due to hemorrhage; antepartum hemorrhage, the most frequent type, occurred in 12.6% of the 877 pregnancies which terminated with fetal deaths. The

Hennepin County Perinatal Mortality Study[2] has reported that 13.7% of the 255 fetal deaths in 1955 were associated with antenatal hemorrhage in the mother. Preeclampsia occurred in 77 mothers and eclampsia in 7 mothers or 9.6% of the fatal deaths. The Hennepin County Perinatal Mortality Study reported this condition in 13.4% of the pregnancies terminating in the 1955 fetal deaths.

Conditions not Related to Pregnancy

Complications not related to pregnancy were reported in 11.1% (97) of the 877 pregnancies in the study and 102 conditions were reported (Table II) for these 97 cases. Diabetes was reported in 30 pregnancies (3.4%). The Hennepin County Perinatal Mortality Study for 1955[2] reported 10 mothers with diabetes or 3.9% in 255 fetal deaths. Hypertensive disease was reported in 16 mothers (1.8%).

Complications of Labor

Complications of labor were reported in 410 (46.7%) of the 877 pregnancies terminating with fetal deaths, with 492 conditions included (Table III). More than one-third (36.1%) of these complications were placental and cord conditions of which almost half (186) were due to premature separation of the placenta and 25 were due to placenta previa. Thus, premature separation was reported as a maternal factor in 21.2% of the pregnancies. This is slightly lower than the report of 24.3% of the pregnancies terminating in the fetal deaths in the Hennepin County study for 1955.[2] Malpresentations were reported in 104 pregnancies (12%), of which 76 were breech presentations. Anomalies of the cord totaled 58 (6.6%), and prolapse of the cord occurred in 48 pregnancies (5.5%).

TABLE I

Complications Related to Pregnancy in 877 Fetal Deaths
Minnesota 1959

Condition		Number		Per Cent
Total pregnancies		877		100.0
Pregnancies with complications		372		42.4*
Pregnancies with complications		372		42.4*
Total complications reported	484			
Hemorrhage		181		20.6
Antepartum	111		12.6	
Intrapartum	61		7.0	
Postpartum	9		1.0	
Preeclampsia		77		8.8
Hydramnios		59		6.7
Multiparity		43		5.0
Anemia		22		2.5
Hypertensive disease		19		2.2
Eclampsia		7		0.8
Pernicious vomiting		7		0.8
Others		69		7.9

*Totals more than 42.4% because some pregnancies had multiple complications.

TABLE II

Complications Not Related to Pregnancy in 877 Fetal Deaths
Minnesota 1959

Condition		Number	Per Cent
Total pregnancies		877	100.0
Pregnancies without complications		780	88.9
Pregnancies with complications		97	11.1
Total complications reported	102		
Diabetes		30	3.4
Hypertensive disease		16	1.8
Heart disease		6	
Nephritis		4	
Pyelitis		4	
Syphilis		2	
Tuberculosis		2	
Other		38	

Operative Procedures

Operative procedures were carried out in 197 deliveries or 22.4% of the pregnancies terminating in fetal deaths, with a total of 209 procedures (Table IV). Breech extraction was carried out in 7% (61) of the 877 pregnancies. Cesarean section was carried out in 5.2% (46 cases) of these pregnancies. Sections were done in 7.8% of the pregnancies with fetal deaths in the 1955 Hennepin County Perinatal Study.[2] Forceps were reported used in 61 pregnancies including eight mid-forceps and three high forceps. Mid-forceps were used in four cases because of prolapse of the cord, once each for the following: premature separation of the placenta, occiput posterior, edema of infant and enlarged head, dead infant. No reason was given in one instance. In two unsuccessful attempts, manual rotation was carried out. High forceps were used in three cases of prolapse of the cord with no reported injury.

Prenatal Visits

The lapse of time between the onset of the last normal menses and the first visit to the physician was reported in 580 of the medical reports; in 297 cases, one-third of the fetal deaths, this item was not reported. Of those reported, there were no prenatal visits in 22 pregnancies (3.8%); 13.6% made their first prenatal visit during the third trimester. Thus 17.4% had prenatal care late or had no prenatal care. During the first eight weeks of pregnancy 21.7% of the mothers made

TABLE III
Complications of Labor in 877 Fetal Deaths
Minnesota 1959

Condition		Number	Per Cent
Total pregnancies		877	100.0
Pregnancies without complications		467	53.3
Pregnancies with complications		410	46.7*
Total complications reported	492		
Premature separation of placenta		186	21.2
Malpresentation		104	12.0
(Breech)		(76)	(8.7)
Anomaly of cord		58	6.6
Prolapse of cord		48	5.5
Placenta previa		25	2.9
Dystocia		17	2.0
Other		54	6.1

*Totals more than 46.7% because some pregnancies had multiple complications.

prenatal visits; one-half made such visits within the first twelve weeks of pregnancy. By 20-weeks gestation, three-fourths had made prenatal visits and a total of 82.5% made such visits during the first two trimesters. Visits by weeks is graphically shown in Figure I.

Rh Determinations

Of the 877 fetal death reports, Rh determination was not reported in 30 cases. There were 847 complete reports of which 67 replies stated that Rh testing had not been done (7.9%); it was carried out in 780 pregnancies or 92.1%. Of the 780 completed tests, results showed 79% Rh positive, 21% Rh negative. The Hennepin County Perinatal Mortality Committee[2] reported that Rh determinations had been carried out in 81% of the pregnancies in 1955. Of these pregnancy reports 72 women were previously Rh sensitized and 56 delivered a previous Rh negative baby. However, about one-fourth failed to answer these two items.

Serologic Test for Syphilis

There was no reply to the item of serologic test for syphilis in 45 reports. Of the 832 replies, the serologic test was not done in 119 pregnancies (14%). There were two mothers with positive serology out of 713 women tested.

Birth Injury to Infant

Birth injury was reported in 17 of 806 reports (2.1%). The item was not answered in 71 reports. It was described as being due to dystocia in two cases, traction to neck and injury to axilla in two instances, and resulting in tentorial tear in two instances. It was reported as occurring in 2.3% of fetal deaths studies by the Hennepin County Perinatal Mortality Committee in 1952.[2]

Congenital Malformations

Congenital malformations were reported in 99 or 12.3% of the 789 replies received to this query regarding the fetal deaths (Table V). This corresponds well to the 13% reported by the Hennepin County Perinatal Mortality Committee in 1955.[2] Of the 77 anomalies described 55 (71.4%) were malformations of the central nervous system as follows: hydrocephalus 24, anencephalus 21, spina bifida 4, meningocele 3, and other CNS malformations, 3. This is a ratio of 69.7 per 1,000 fetal deaths. Three cases of harelip and/or cleft palate were reported (3.9% of the reported anomalies). This is a ratio of 3.8 per 1,000 fetal deaths.

TABLE IV
Operative Procedures in Pregnancies Resulting in 877 Fetal Deaths
Minnesota 1959

Procedure		Number	Per Cent
Total pregnancies		877	100.0
Pregnancies without operative procedures		680	77.6
Pregnancies with operative procedures		197	22.4
Total procedures reported	209		
Breech extraction		61	7.0
Forceps		61	7.0
Outlet	34		
Low	16		
Mid	8		
High	3		
Cesarean section		46	5.2
Internal version and extraction		15	
Other		26	

TABLE V
Congenital Malformations in 877 Fetal Deaths
Minnesota 1959

Malformation		Number	Per Cent
Total fetal deaths		877	
No reply to query		88	
Replies		789	100.0
No anomaly		692	87.7
Yes — not described		20)	
		)97	12.3
Yes — described		77)	
Hydrocephalus	24		
Anencephalus	21		
Spina bifida	4		
Meningocele	3		
Other CNS malform	3		
Harelip and/or cleft palate	3		
Other	19		

Summary

The 877 confidential medical reports filed with the Section of Maternal and Child Health in 1959 represent 74.1% of the total 1,184 fetal deaths. This brief report of the information found on the medical sections of the fetal death certificates illustrates that a great deal of information concerning the medical condition of the mother and child as well as the complications of pregnancy, labor and delivery can be made available in the confidential medical report of fetal deaths and of live births. Although the material on these certificates is not as accurate or complete as that obtained by a review of clinical records or scientific studies, analysis of these reports does provide useful statewide information for physicians and hospital and for public health activities.

The addition of a similar confidential medical section to the revised live birth certificates in the near future will make available information concerning the medical condition of the mother and maternal complications as well as data on newborn infants. By continued close cooperation between the Minnesota Department of Health and the state medical and hospital associations and paramedical personnel this necessary information can be made available for the improvement of medical care and for public health programs.

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TUMOR CASE

A sixty-six year old widow consulted her physician with complaints of pain in the right groin, hip, and upper thigh for three weeks. She had noted the onset of pain to coincide with the appearance of a tender swelling in the right groin. The swelling suddenly appeared while she was walking, and had remained during the ensuing three weeks.

Examination disclosed a slightly obese woman in no acute distress. Aside from a slight hypertension and mild upper abdominal tenderness, there was a four by six centimeter, tender, firm mass just below the midportion of the right inguinal ligament.

Admission chest x-ray, hemoglobin, leucocyte count, differential, and urinalysis were all normal. The inguinal area was exposed and explored through a herniorrhaphy incision parallel and superior to the inguinal ligament. Dissection disclosed the mass to be a firm, slightly lobulated, apparently incapsulated tumor in the substance of the adductor brevis muscle. The mass was locally excised.

Histological examination subsequently disclosed the neoplasm to be a sarcomatous tumor, probably a rhabdomyosarcoma. The initial procedure being obviously inadequate, several possibilities for further therapy were considered. In view of the somewhat grim ultimate outlook for cure under any circumstances, a compromise procedure was performed. The patient was returned to surgery ten days following the initial procedure. At this time radical en bloc excision of the old operative site, inguinal lymph nodes, and the pectineus, adductor longus and brevis and portions of the adductor magnus was carried out. The patient's recovery was delayed by seroma formation and wound separation, despite use of wound suction catheters. Complete healing of the defect occurred over a period of two months.

The pathological study of the tissue removed at the second operation disclosed residual tumor in the muscle adjacent to the site of primary tumor. The lymph nodes were not involved with metastasis.

Currently, six months postoperatively, the patient feels well, is fully ambulatory without cane or crutch, and has no evidence of recurrence. There is mild to moderate edema of the thigh.

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Many times we tend to ignore the importance of common ailments which do not seem serious in terms of endangering a patient's life. However, often times the economic factors of time lost at work make these problems of real importance. The author presents a clean-cut study of the etiology of paronychia which could be helpful in a preventative manner.

Etiology of Paronychia

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A REVIEW of medical papers of the last ten years has not turned up a single worthwhile study on the etiology of paronychia. While some authors believe that paronychia is due to careless manicuring, others have assumed that it was due to neglect of the cuticle, i.e. failure to manicure the fingers. (1, 2, 3) No one has thought the subject of enough importance to carry out a significant study on the etiology of this infection. Paronychia **is** an important disease. The average patient with paronychia is disabled from his occupation for a period of five to eight days, and this condition causes millions of man-hours of disability in every civilized country. (4, 5)

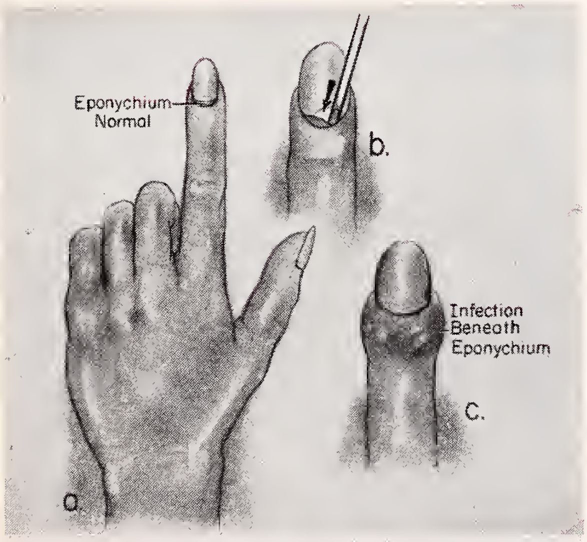

FIGURE 1

A. This illustrates the normal eponychium; it is adherent to the base of the nail.

B. In this diagram the eponychium is being separated from the base of the nail by an orange stick. This allows pathogenic organisms to gain access to the soft tissues at the base and sides of the nail.

C. A typical case of paronychia or "run-around."

Methods

Thirty-seven patients with paronychia, who were seen and treated in the office, were asked detailed questions regarding the care of their fingers. In addition, careful examination was made of all the fingers of both hands. Fifty-five control patients, none of whom had paronychia, were asked the same questions, and their fingers were carefully examined in the same way. The analysis of this information disclosed some significant differences between the paronychia patients and the control patients.

Findings

Paronychia patients, as a group, manicured their cuticles more frequently (see Table I). It was noted that the incidence of manicuring was more than twice as great in the group of patients with paronychia as it was in the control group. Although it is a common assumption that most

TABLE I—FREQUENCY OF MANICURING OR "PUSHING BACK" CUTICLE

	No. of patients in group	No. who manicure or push cuticle back
Paronychia patients	37	24 (65%)
Control patients	55	17 (31%)
P=<.01		

TABLE II
FREQUENCY OF INJURY PRIOR TO PARONYCHIA

A. History of antecedent trauma		
1. Injured by manicuring	4	(11%)
2. Other injuries to cuticle	10	(27%)
(trauma, tugging at "hangnails," etc.	14	(38%)
B. No history of trauma		
1. Number in this group who manicure their nails	19	(51%)
2. Number who do not manicure	4	(11%)
	23	(62%)

TABLE III—SEX OF PATIENTS

	Men	Women
Paronychia patients	9 (24%)	28 (76%)
Control patients	31 (54%)	24 (46%)
Surgery patients for four days (154 consecutive patients)	57%	43%

TABLE IV—FREQUENCY OF MANICURING CUTICLE IN EACH SEX (CONTROL GROUP)

	Number	Number who manicure or push back cuticle at least once/month
Men	31	7 (23%)
Women	24	10 (42%)

TABLE V—INCIDENCE OF SEPARATION OF THE EPONYCHIUM FROM THE BASE OF THE NAIL

	Number of fingers examined	Number of fingers where separation of eponychium from base of nail was present
Paronychia patients	300	211 (70%)
Control patients	545	175 (32%)
p=<.00001		

cases of paronychia are caused by careless manicuring or tugging at "hangnails," (1, 2) in this series only four patients (11 percent) with paronychia could recall injuring their fingers while manicuring (see Table II). Ten patients (27 percent) had a history of injury to the finger or cuticle, either from tugging at a "hangnail" or from some other source of trauma (e.g. getting the finger caught in a car door). The majority of paronychia patients (62 percent) could not recall any kind of trauma to the cuticle. However, all but four of this latter group of twenty-three patients manicured their nails at least once a month.

Seventy-six percent of the paronychia patients were women; however, a majority of the surgery patients passing through the office were men (see Table III). This paradox might be explained by the fact that women are more likely to manicure their nails (see Table IV).

Careful examination of all the fingers of both paronychia patients and control patients disclosed an obvious difference in the relationship of the eponychium to the base of the nail in these two groups (see Table V). In 73 percent of the fingers of patients with paronychia it was noted that the eponychium was separated from the surface of the nail. This condition was present in only 32 percent of the fingers of control patients. This difference is highly significant.

Only limited studies were done to determine the nature of the etiological organism, since these studies have been done before. The cultures which were made did tend to corroborate the work of other investigators who have determined that approximately 94 percent of paronychia infections are due to staphylococcus and 6 percent to streptococcus and coliform organisms. (6)

Right-handed patients did not have a greater incidence of paronychia of the right hand, nor did left-handed patients have a higher incidence of paronychia of the left hand.

The thumb and index finger were the digits most frequently afflicted, suggesting that the greater usage of these digits may be important. Most cases of paronychia of the index finger were on the radial side of the nail; this may be related to apposition of this side of the finger to the thumb, but this series is too small to be regarded as significant on this point. Most cases of paronychia of the thumb were on the radial side of the nail. Since the radial side of the nail of the thumb is less protected than the ulnar side of the nail, this would suggest that trauma may be an etiological factor in paronychia of the thumb; however, this series is too small to be conclusive on this point.

Conclusions

It would seem from this study, that only a minority of cases of paronychia can be ascribed to trauma or careless manicuring. Most cases are probably due to separation of the eponychium from the nail (see Figure 1), regardless of the cause of this separation. Even careful manicuring, though it does not result in a direct injury to the finger, does elevate and separate the eponychium from its normal adherence to the nail. This allows pyogenic organisms to gain access to the soft tissues about the nail.

Questioning of several grade school teachers, school nurses, and "hygienists" confirmed the fact that children are still taught to push back the cuticle ("show the moon") on their fingers with a towel, an orange stick, or by some other method. Advertisements in "glamour" magazines also promote the "long" look for fingernails. This is achieved not only by allowing the fingernails to grow long, but also by pushing back the cuticle.

Some people, even though they do not manicure the cuticle on their fingernails, have inherently a poor eponychium. These individuals may be unusually susceptible to the development of paronychia, especially if they are engaged in an occupation which causes drying of the cuticle and rough use of the hands. For example, one of my patients, a commercial artist, had practically no eponychium on any of his fingers. His work required that his hands be in various types of colored powder for extended periods of time. He had a history of frequently recurring paronychia.

Summary

An analysis of this series of patients with paronychia indicates that the presence of a healthy eponychium which is adherent to the base of the nail is probably important in the prevention of paronychia. Methods of fingernail care which involve removal or loosening of the normally adherent eponychium produce an increased incidence of paronychia.

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A successful man is one who has tried, not cried; who has worked, not dodged; who has shouldered responsibility, not evaded it; who has gotten under the burden instead of standing off, looking on and giving advice.—Elbert Hubbard.

It is not that I see more than others. It is that I stand on the shoulders of a giant.—Newton.

An interesting clinical observation — use of a tranquilizing drug to counteract the anxiety aggravating action of an anti-depressant drug is an effective and acceptable treatment for many depressed patients. The improvements, however, may be the result of the placebo effect. Further observations of the double blind control type would be valuable.

Treatment of depression with Combined Drug Therapy

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In using some of the newer antidepressants, I have noticed that they sometimes give rise to anxiety or aggravate an underlying anxiety state. While I am not sure of the incidence, it happens often enough to rank among the other limitations already documented. Nevertheless, the anti-depressants represent an advance in our treatment of mental and emotional disorders, and provide a happy alternative, in some patients, to hospitalization and electro-convulsive therapy. To counter anxiety, whether co-existing with depression or erupting from drug therapy, I began using tranquilizers along with the anti-depressants. To the anti-depressant tranylcypromine, I added trifluoperazine because this tranquilizer has been reported to cause no deepening of depression.

During a period of one year I used this combination of drugs in the treatment of 8 men and 24 women who were depressed. In 26, depression was the primary diagnosis; in five, depressive symptoms were associated with the following diagnoses; schizophrenia (1), anxiety state (1), functional muscle spasms in the neck (1), psychoneurosis, mixed type with hypochondriasis (1) schizo-affective disorder (1). The diagnosis for the remaining patient remains uncertain. He fears falling, has dizzy spells, suffers from insomnia, is extremely fatigued, and has depressed feelings. The youngest patient was 22, and the oldest, 70; their average age was 50 years. All had received psychotherapy, drugs, or electro-convulsive therapy for this or a previous depressive episode; 20 had been hospitalized at least once, 7 more than three times. Twenty-seven patients were treated with the drugs as a last effort to avoid hospitalization after other therapy, including drugs, had produced few or no beneficial results. Ten patients, in whom some organic disorder was present or suspected, continued to receive treatment for the organic disorder from the physicians who referred them while I treated their depressive states.

Although depressions had been recurring in most patients for years, the current episodes had usually been present only for from three to six months before treatment with tranylcypromine-trifluoperazine was begun. Initial doses of these drugs were 10 mg. tranlycypromine and 1 mgm trifluoperazine, orally, two or three times a day. Subsequent dosages were determined by the patients' responses. Only one patient received more than 30 mg. tranylcypromine and 3 mg. trifluoperazine a day; she took 20 mg. and 2 mg. of the respective drugs in the morning, 10 mg. and 1 mg. at noon, and 20 mg. and 2 mg. again at 4:00 p.m. Treatment was usually discontinued within two weeks if no improvement was seen or if the patient seemed to be getting worse. Concomitant medication, mild sedatives or non-phenothiazine tranquilizers, was prescribed for 16 patients in whom insomnia or tension was particularly troublesome. Except for those who did not respond, treatment has been continued for an average of three months; as of this writing, all patients are still receiving the drug but in most cases in reduced dosage. Results were graded as **much improved, improved, same,** or **worse.**

Although no general description would be accurate for any one patient, some general observations concerning the group can be made. The more common pre-treatment complaints were depression, loss of interest in their surroundings, loss of appetite, fatigue, insomnia, and various somatic complaints. Though most of the patients had been able to continue with their jobs or their household duties, they had found it very difficult to do so, and experienced little or no satisfaction with their performances. Some in fact, had been unable to continue working. In addition, most of the patients who had been hospitalized at one time or another were distressed by the thought that they might have to return for additional electro-convulsive therapy or other treatment.

Patients who returned to their pre-morbid status or whose symptoms were relieved to the point that they no longer seriously interfered with their social or vocational functioning, were considered **much improved.** Those whose symptoms were significantly relieved and found it less difficult to perform socially or vocationally were considered **improved.** All others, including some who seemed to experience minor or limited relief of symptoms, were considered **same,** or, if their symptoms became more severe or side effects occurred, **worse.**

Sixteen patients were **much improved,** seven were **improved,** four remained the **same,** and five patients became **worse.** All of the patients who showed improvement responded within two weeks. One patient who became **worse** had responded initially but relapsed during the sixth week of treatment. Of the nine who did not respond, seven have been hospitalized and two are receiving electro-convulsive therapy as out-patients.

Perhaps the most satisfying results were achieved in the 18 patients for whom failure to improve would have meant hospitalization. All of them improved enough to stay out of the hospital and continue treatment as out-patients. I was also very pleased to discover that I could almost always tell within two weeks whether the drugs would produce beneficial results and was thus spared the waiting period I had experienced with other antidepressants. Nor was there the increase in anxiety that often occurs with antidepressants. Instead, those who improved experienced relief of depression and anxiety at the same time. Not that this was particularly surprising—it was, after all, only reasonable to expect that adding an effective tranquilizer would reduce or eliminate anxiety—but reasonable expectations have a way of not always being realized. It is very satisfying when they are.

When I began to analyze my data, I realized that by taking advantage of another lesson I had learned from my experience with other antidepressants, I had made it impossible to evaluate the incidence of insomnia in this series. Because I knew that insomnia was a common side effect associated with antidepressants, I told all patients to take the last dose of the day before 4:00 p.m. and prescribed mild sedatives for those in whom insomnia was a presenting complaint. Had I not, I'm sure this side effect would have occurred in at least some patients. As it was, only one patient complained of a side effect which was a "swaying" sensation after taking the drugs for four weeks.

WHAT IS YOUR DIAGNOSIS?

A 56 year old printer working at his press was stricken suddenly with severe anterior chest pain radiating into the left arm. The pain persisted for three hours when he was admitted to the hospital and the pain relieved with morphine. There had been no previous illness.

Physical examination revealed a blood pressure of 120/80. Heart rate 80 and regular. The heart tones were normal and no murmurs were heard. The lungs were clear. There were no other abnormal physical findings.

The white count was 15,000 with 86 percent pmn's. SGOT transaminase levels were 10, 60 and 40 units on three successive days. ECG showed a Q wave, elevated S-T and negative T wave in leads III and aVf characteristic of a posterior myocardinal infarction.

A diagnosis of a posterior myocardian infarction was made and the patient treated with anticoagulation and bed rest. He had a rise in temperature to 100 during the first week which came back to normal on the 6th day. On this day the patient complained of sudden increase of chest pain and he stated that he felt very ill. His temperature rose to 104. Blood pressure was 80/60 and now a grade IV harsh low-pitched systolic murmur was audible at the apex and near the sternum and in this area a systolic thrill was apparent. There were rales in both lung bases. The patient was digitalized. He lived 45 days always in heart failure or on the verge of it. His temperature returned to normal during the second week and remained normal thereafter. He was never free of heart failure and was found dead in bed 45 days after his hospitalization. What is your diagnosis?

See Page 40.

The patients with contact lenses should be checked frequently by a physician. Comfort to the wearer can be assured and serious complications avoided with proper supervision. General principles are provided for all doctors in this article.

Corneal Contact Lenses and Ocular Disease

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The continued use of contact lenses is assured: many patients wear them without difficulty, and they are specifically indicated in the treatment of certain ocular diseases. In addition to knowing the indications, physicians prescribing contact lenses for patients with ocular diseases must realize certain dangers associated with their use. This paper concerns these dangers and the indications. It presents precautions for the physician, precautions for the patient, and discussions of ocular diseases constituting indications for and contraindications to treatment with contact lenses.

Precautions for the Physician

Expect a Corneal Reaction.—A lens placed on the cornea alters the physiology to some degree and creates a temporary pathologic condition. Therefore, before considering the use of contact lenses in abnormal eye conditions, it is well to know what problems they may create in the normal eye. Corneal abrasions may result from a foreign body beneath the lens or from the act of placing the lens on the cornea, particularly by the inept and novice contact-lens wearer. Either too forceful application or abnormal positioning of the lens during this maneuver can abrade the corneal surface. This type of injury seems to occur particularly in individuals who only wear contact lenses occasionally for short periods.

Lenses which do not fit correctly may produce corneal injuries also. A lens which fits the cornea

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too tightly may soon produce superficial edema; and, if the lens is worn persistently, serious abrasion may develop and possibly corneal infection and ulceration. The latter circumstances can be avoided if proper treatment is prescribed quickly. A lens which is too loose may produce superficial abrasions simply by the mechanical effect of rubbing the corneal epithelium. If such lenses are not removed, further injury may occur with possible serious consequences such as corneal infection and ulcer. Although superficial injuries often heal rapidly, deeper injuries or ulcers result in permanent scars which can preclude the further use of contact lenses, particularly of the corneal type.

The long-term effects of contact lenses on normal corneal tissue is not known as yet.

Know the Ancillary Agents.—One should be extremely careful with solutions used for wetting and soaking contact lenses. The manufacturers claim that soaking solutions containing chlorobutanol and benzalkonium chloride are bactericidal. Bacteriologists at the Mayo Clinic found that such solutions are effective bactericidal agents against Staphylococcus aureus, Streptococcus faecalis, Pseudomonas aeruginosa, and Escherichia coli, but not against aerobic spore-forming organisms. The solutions inhibited growth of sensitive organisms up to 1 week, the duration of testing. Wetting agents containing only benzalkonium chloride were not bactericidal or bacteriostatic.

Any drug, such as sodium fluorescein, used as an adjunct in fitting contact lenses should be sterile. I use and recommend sterile, individual papers impregnated with fluorescein for each eye.

Select Patients Carefully.—If the physician is to recommend contact lenses, he should consider carefully the advantages and the disadvantages, which may be associated with their use in treating a particular disease in a particular patient. He should determine, for each patient, whether the condition warrants risking injury to the eye.

Only patients who are properly motivated, or who have conditions which the examiner believes would be benefited by contact lenses, should be fitted. About 95 per cent of patients wanting contact lenses want them for cosmetic reasons primarily. These individuals may persuade the physician that they need and want contact lenses; but, under no circumstances, should the physician or the parent be responsible for persuading the patient to use them. The presence of some abnormality of the eye which the physician decides in his good judgment might be benefited by contact lenses constitutes an exception.

It is well not to prescribe contact lenses for patients who want them for occasional use.

Examine Patients Thoroughly.—Because many ocular diseases contraindicate the use of contact lenses, every effort should be made to discover them. Lesions of the cornea are particularly liable to aggravation by contact lenses. Therefore, an examination with the biomicroscope is especially important; it detects corneal abnormalities and reveals details of the corneal topography.

Precautions for the Patient

Importance of Cleanliness.—Hygiene is especially important, and the patient should wash his hands thoroughly before inserting or removing lenses. The lenses, also, should be thoroughly cleansed before insertion and before storage in the soaking kit. Soaking the lenses in appropriate solutions overnight definitely makes them more comfortable. Patients should use the solutions with care, changing the solution in the soaking kit at least once a week.

Use of the Lenses.—If the patient is taught the proper technic of lens insertion, removal, and care, many problems may be avoided. Patients should be advised not to wear contact lenses continuously for long periods. I have an acquaintance who has worn contact lenses day and night for several months without apparent injury to the corneas, but such a schedule is not recommended for the usual contact-lens patient. I also advise patients not to wear their lenses when sunbathing.

Danger of Corneal Abrasion.—Patients should be especially warned to discontinue use of lenses if corneal irritation develops. They must be told that, if an abrasion occurs, it is important for the cornea to heal completely before the lens is worn again.

Contraindications for Contact Lenses

Diseases of the Cornea.—Abnormalities of the cornea constitute some of the most frequent contraindications to, and the most important indications for, the use of corneal contact lenses. Dystrophies of the cornea present some peculiar problems. In epithelial dystrophy, one should use extreme caution in prescribing corneal contact lenses, for the lenses themselves initially create a superficial edema in nearly all patients. Endothelial corneal dystrophy, on the other hand, sometimes constitutes an indication for corneal lenses. It is mentioned in a subsequent section.

Pannus formation from any cause is, in general, a contraindication to the use of contact lenses, since the continued abrasive action of the lens may irritate or reactivate a formerly quiescent condition. Unless one is prepared to follow the patient closely, it is best not to fit him with corneal lenses.

Traumatic injury to the cornea is a definite contraindication to fitting or continued wearing of contact lenses until the lesion is completely healed. If a corneal scar from a previous injury is present, particularly if it is superficial, extreme caution is necessary. A lens in contact with a corneal scar may cause gradual breakdown of the tissues, leading to recurrent erosion or abrasion, infection, ulceration, and possibly deterioration of the eye. If at all possible, central scars should be completely vaulted by the lens; if the scars are peripheral, a small lens which does not touch the scar may be used. If the scar is sufficiently deep in the stroma to be covered by intact epithelium, a corneal lens may improve an existing irregular astigmatism; nevertheless, one must watch continually for any possible breakdown of corneal tissues over the scar. If it is essential for the patient to wear a contact lens and too much scar tissue is present, a corneal transplant may be considered as a primary procedure to eliminate the irregular surface. Patients with a history of corneal erosions should not be fitted with contact lenses unless erosion has not recurred for several months. Even then, the abrading action of the lens may produce a recurrence. If lenses are prescribed, the patient should be warned of the possible consequences and examined frequently for evidence of change. I have examined patients with retained foreign bodies, such as glass, in the corneal stroma, who seemed to experience no ill effect from the use of contact lenses, as long as the outer corneal surface remained intact. Again one should maintain diligent observance in order to catch early changes in corneal integrity.

Diseases of the Conjunctiva and Sclera.—Inflammatory conditions of the conjunctiva and sclera also are contraindications to the use of corneal contact lenses, not only because their use may aggravate the existing process but also because of the likelihood of corneal infection following the production by the lens of some minor corneal injury. Healed wounds of the conjunctiva or sclera are not contraindications to the use of contact lenses, unless there is corneal damage. Corneal contact lenses are relatively contraindicated in the presence of a pterygium. If large and active, or encroaching on the cornea, it should be removed before a contact lens is utilized. If the pterygium is inactive, and only the peripheral portion of the cornea is involved, a small lens which does not touch the involved area may be prescribed. Tumors of the conjunctiva or sclera should be observed carefully or removed before fitting a contact lens, because the condition may be aggravated by wearing the lens.

Diseases of the Eyelids and Contiguous Structures.—Any disease of the eyelids, whether acute or chronic, should be cured before the patient wears contact lenses. If the patient is already wearing them and a disease of the lids occurs, wearing the lenses should be discontinued until the active process is eliminated. In the presence of entropion, particularly with trichiasis, a contact lens will perhaps protect the cornea from the inturned lashes to some degree. However, it is possible that a lash may get beneath the contact lens, or that the lens will rest on the inturned lid so that in the process of blinking it is dislodged from the cornea. It is best to obtain a normal lid position before contact lenses are fitted. Should ectropion be present, the contact lens may slip downward on the cornea to rest at the limbus instead of remaining in the normal position on the cornea. Operation to correct the ectropion is essential prior to fitting the lenses. If operation is not desirable, the lens must be tighter than usual to prevent abnormal mobility. Ptosis is not a contraindication to contact lenses, but the eyelid may cause more pressure on the lens and, hence, on the cornea, resulting in discomfort to the patient. Many individuals having ptosis look better with spectacles because the ptosis is less obvious. Should contact lenses be desired anyway, it is preferable to treat the ptosis before fitting such patients.

Any disease of the lacrimal apparatus which could serve as a potential source of infection should be alleviated before contact lenses are considered. If there is a deficiency of tears with dryness of the eyes, the patient should not have contact lenses unless some type of artificial tear is utilized to maintain proper moisture of the exposed part of the globe. Since the contact lens is is held on the cornea by capillary attraction utilizing the tears, and since normal corneal physiology cannot be maintained without proper precorneal fluid, one should be extremely cautious in fitting lenses for any individual with abnormally dry eyes.

Diseases of the nose, nasopharynx, or sinuses which may affect the eyes secondarily should be eliminated before contact lenses are prescribed.

Paralysis of the Fifth Cranial Nerve.—If the cornea is anesthetic because of paralysis of the fifth cranial nerve, it is probably best not to fit the patient with a corneal contact lens simply because he cannot detect corneal irritations caused by the lens or by a foreign body beneath it. If, for medical reasons, it is considered necessary to fit such a patient with a contact lens, he should be examined frequently and thoroughly to find any possible corneal injury. This obviously requires the knowledge of one skilled in diagnosis and treatment of diseases of the eye.

Systemic Disease.—Patients with exophthalmos associated with thyroid disease should not wear contact lenses until the disease process has been inactive for at least 6 months.

Uveitis.—In the presence of uveitis, whether in the anterior or posterior segment of the eye, contact lenses are contraindicated. When the disease process has been completely quiescent for at last 6 months lenses may be fitted; but, even then it is possible that the use of contact lenses may reactivate the disease process.

May I repeat that if one wants to prescribe contact lenses in any of the conditions which I have cited as contraindicating their use, it is imperative that he perform careful and frequent medical evaluation if continued health of the eyes is to be assured.

Contraindications or Indications

Diseases of the Cornea.—Acute or chronic keratitis should be controlled for several months before corneal contact lenses are fitted, for abrasive action of the contact lens on the cornea may kindle a dormant inflammatory process. This is particularly true if there are scars from previous disease, which the continual motion of the lens may cause to break down. In my opinion patients who have had dendritic keratitis should not wear corneal contact lenses, because the possibility of recurrent involvement of the superficial corneal tissues is considerable. Some ophthalmologists who have fitted such patients have stated the lenses have been worn safely. Certainly careful follow-up examinations at frequent intervals are necessary. Patients who have had interstitial keratitis frequently have irregular astigmatism; they are grateful, therefore, for the improved visual acuity afforded by corneal contact lenses. It is possible, but unusual, for the disease to become reactivated by the continued wearing of corneal lenses.

Neither megalocornea nor microcornea is a contraindication but proper fit is essential. Patients with megalocornea require a larger and more tightly fitting lens, whereas those with microcornea require a smaller lens.

Glaucoma.—A few reports, mostly oral, indicate that contact lenses are not harmful for patients with glaucoma. Since some ophthalmologists are uncertain about the effect of corneal lenses in this disease, it is safer not to prescribe them unless one is prepared to follow the patient closely to detect any untoward change. Possibly, a corneal lens will massage the eye when blinking occurs, thereby reducing intraocular pressure; however, the lens may aggravate the patient or irritate the eye, thereby increasing intraocular pressure. If a filtration area has been established by operation superiorly near the limbus, contact lenses must be small to prevent encroachment on this area during blinking, since continued abrasive action by a lens may tend to cause further scarring or possibly perforation of the filtration area with subsequent internal ocular infection.

Diseases of the Vitreous, Optic Nerve, and Retina.—Diseases of the vitreous, except possibly abscesses or marked retinitis proliferans, present no direct contraindication to the use of corneal lenses.

Contact lenses should not be prescribed until any disease of the retina or optic nerve is cured or quiescent. If a patient has a gross refractive error, and vision is further reduced by changes due to degeneration or disease, contact lenses may be the best means by which vision can be improved when the existing condition is stabilized.

Paralysis of the Seventh Cranial Nerve.—In the event of paralysis of the seventh cranial nerve with failure of the lids to close normally, one might consider contact lenses for protection of the cornea. However, the lids are somewhat lax, and a contact lens will tend to drop rather freely to rest on the sensitive lower limbus rather than on the lower lid as it should. If the patient is to have corneal lenses, they should be larger and tighter than usual to prevent this. Blepharorrhaphy or canthoplasty may be necessary to bring the lower lid into a more normal position before contact lenses are prescribed.

Exophthalmos and Enophthalmos.—In fitting patients with exophthalmos, lenses need to be designed with a greater diameter than usual and to fit somewhat tighter than usual in order to remain in apposition to the cornea. Corneal lenses may serve to protect the cornea if there are sufficient tears to keep the eyes moist. However, associated thyroid disease must be inactive for 6 months prior to fitting lenses.

If enophthalmos exists, lenses need to be smaller than usual and, if the lids are somewhat tight, they may need to be more flat than usual.

Disease Indications

Diseases of the Cornea.—Some corneal degenerations, particularly keratoconus, are prime indications for contact lenses. Individuals with keratoconus often find it impossible to obtain proper spectacle lenses because the existing astigmatism is irregular and marked. Contact lenses give best results in those patients in whom the keratoconus is discovered early. In some of my patients, I have observed that corneal lenses in keratoconus will not only flatten the cornea to a considerable degree but also will cause some retardation of the disease process. Several other ophthalmologists, with whom I have conversed, have noticed similar improvement. Because the cornea is molded readily, fitting contact lenses in keratoconus may require a longer period than usual before a permanent lens is secured. Many ophthalmologists consider contact lenses the number one treatment for keratoconus, and this is one of the few instances in which the patient should be urged to obtain them. However, since corneal sensation at the apex of the cone is decreased and lenses may touch this area lightly, superficial abrasions may occur readily. It is important, therefore, to observe patients closely until an adequate fit is secured. If the disease progresses until considerable scarring of the cone or actual breaks in the posterior corneal surface occur, corneal edema may prevent proper correction of vision. In such a circumstance corneal transplant should be considered.

Corneal curvature can be somewhat flattened by contact lenses, but this change is temporary. Changes in refractive errors, therefore, particularly in myopia, are relative and not permanent. The cornea will regain its former shape when the lenses are discontinued for a short period.

In endothelial corneal dystrophy, the patient's visual acuity may be much better with contact lenses than with spectacle lenses, particularly if an irregular astigmatism exists. Such patients should be examined carefully by biomicroscopy to determine whether any change in the disease has been caused by the use of the lenses.

Congenital Disorders.—For individuals with congenital abnormalities, such as partial aniridia, coloboma of the iris, ectopic pupil, iridodialysis, multiple pupils, or albinism, special types of corneal contact lenses may be useful. These may be tinted in a variety of colors or the peripheral portion of the lenses may be blackened, leaving a central clear pupil. Such lenses considerably improve the patient's visual acuity.

Postoperative Conditions. — Corneal contact lenses are useful in certain postoperative conditions, particularly for patients who have had a corneal transplant or cataract removed. A corneal transplant should be completely healed, and there should be no evidence of staining with fluorescein in the area of the scar before the lens is prescribed; also, the lens should not touch the scar. As noted previously, the continued abrasive action of the lens on the scar may cause a breakdown of the tissues. If a clear transplant is placed in an otherwise scarred and vascularized cornea, corneal contact lenses may be contraindicated, not because of the effect on the transplant so much as the effect on the existing scar and vessels surrounding it. In this condition lenses should not be fitted unless they are of the scleral type, which vaults the entire cornea. Corneal contact lenses should be used only when the periphery of the cornea is clear or sufficiently viable to make it unlikely that the lens will reactivate the disease process, promote new vessel growth, or increase scarring. The size of the graft is, of course, important. The smaller the corneal transplant, the better chance one has to clear it completely with the corneal contact lens and thus provide improved visual acuity.

The use of contact lenses after cataract extraction is discussed in the next section.

Cataract.—Contact lenses may be worn by individuals who have cataracts provided other contraindications are not present. There is no indication that the use of corneal lenses affects the maturation of a cataract. Tinted lenses are useful in reducing glare for these individuals.

For patients who have had cataract extractions, a contact lens may be fitted when the sclerae are white, there is no further evidence of iritis, the refraction is stabilized, and the keratometric readings are consistent for 3 or 4 consecutive weeks. Since sensation is definitely reduced in the area of the corneal section, aphakic patients may tolerate corneal contact lenses more readily than patients with normal corneas. For this reason a cautious approach is necessary in fitting lenses, since the patient may be unaware of injury to the cornea by the contact lens. It is extremely important, therefore, to examine an aphakic patient more frequently in order to determine whether the lens has induced corneal abnormality. Contact lenses are extremely useful in aphakia for several reasons. They control glare, eliminate distortion, improve peripheral vision, and reduce magnification of images virtually to normal.

With unilateral aphakia it is difficult to wear spectacles because the difference in magnification of the image between the two eyes is intolerable. With the corneal contact lens on the surgically treated eye, magnification is reduced sufficiently to permit binocular vision in most individuals. Also, contact lenses can be tinted in order to reduce glare for the aphakic patient and to make it easier for him to find the lens, when he is ready to insert it. Peripheral vision is improved markedly, for the thick spectacle lenses otherwise required produce considerable impairment of the field of vision, particularly in an area approximately 15 degrees from the point of central fixation.

The aphakic patient is no particular problem, if he is not too infirm to insert the lens. Special devices for inserting the lenses are available.

Reading glasses or bifocals are utilized for near work in addition to the contact lenses.

Summary and Conclusions

Corneal contact lenses are indicated in the treatment of certain ocular disorders, and they have been used satisfactorily by many patients. Because these facts assure the continued use of contact lenses, physicians need to be informed concerning contraindications, precautions, and indications relative to their use.

The physician should expect reactions to the lenses, know the proper use of soaking solutions and dyes, select patients carefully, and examine patients thoroughly. He should advise his patients of the importance of cleanliness, of the proper way to use the lenses, and of the necessity to stop using them if abrasion *or* superficial edema occurs.

Diseases contraindicating the use of contact lenses include the following: epithelial dystrophy and unhealed traumatic or inflammatory lesions of the cornea, conjunctivitis, blepharitis, inflammation of the lacrimal glands, paralysis of the fifth cranial nerve, and uveitis.

Diseases which are sometimes contrandications to and sometimes indications for the use of contact lenses include the following: interstitial keratitis, paralysis of the seventh cranial nerve, and glaucoma.

Diseases constituting indications for the use of contact lenses include: keratoconus, congenital defects such as ectopic pupil and partial aniridia, and cataract, particularly after operation.

I want to re-emphasize that the fitting of any appliance to the cornea will alter its physiologic activity to some extent. Since the use of the lens creates an abnormal process, a medical problem which should be carefully evaluated periodically, the ophthalmologist should follow the patient continuously. As long as the physician is aware of the possible consequences of corneal lenses in abnormal conditions of the eye, he may recommend them. If he selects his patients carefully, instructs them properly, and uses good clinical judgment in fitting lenses, his practice will reflect the value of contact lenses.

DIAGNOSTIC HINTS

Abdominal Pain

Abdominal pain is caused by adhesions, appendicitis, colic, constipation, cough, peptic ulcer, dysentery, esophagitis, gastritis, hydronephrosis, intestinal obstruction, parasites, mesenteric adenitis, pneumonia, porphyria, and pyloric stenosis.

In the young, *periumbilical* pain usually is the result of some congenital defect. In the adult, it is more often an early manifestation of acute appendicitis, persistent urachus, Meckle's diverticulitis, volvulus, intussusception, mesenteric thrombosis, and acute appendicitis.

Pain in the *right upper* quadrant with its densely populated abdominal organs may suggest the following diseases: Herpes, pneumonitis, pleurisy, urinary infection, hepatitis, peptic ulcer, carcinoma of the colon, cholelithiasis, pancreatitis and retroperitoneal appendicitis.

Pain in the *left upper* quadrant of the abdomen, in addition to its numerous intraperitoneal diseases, suggests the possibility of cardiac and intrathoracic diseases with pain referred to this area.

Pain in the *right lower* quadrant of the abdomen, in addition to its most frequent cause, appendicitis, suggests inguinal hernia, low back strain, radiculitis, ureteral calculus, ileocolitis, pelvic peritonitis, salpingo-oophoritis and endometriosis.

Pain in the *left lower* quadrant of the abdomen presents fewer diagnostic problems than any quadrant of the abdomen. In addition to the kidneys, ureters and pelvic organs, sigmoid diverticulitis is one of the most frequently observed causes for pain in this area.

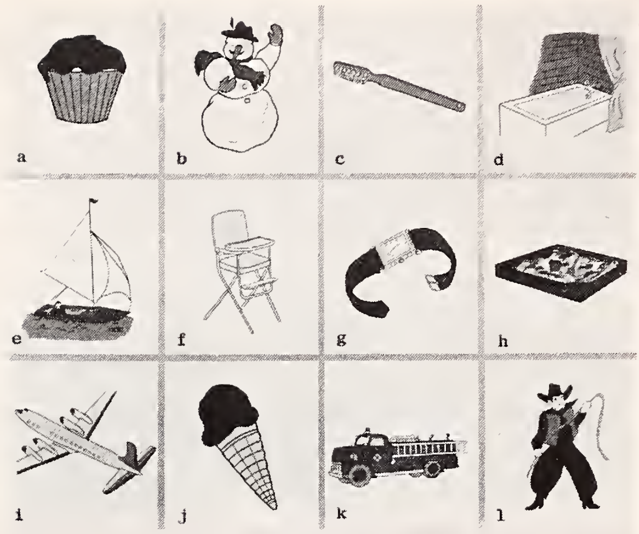

Fig. 1. The picture board used in assessing response in the verbal-auditory screening of children (VASC). **a.** Cupcake. **b.** Snowman. **c.** Toothbrush. **d.** Bathtub. **e.** Sailboat. **f.** Highchair. **g.** Wristwatch. **h.** Sandbox. **i.** Airplane. **j.** Ice cream. **k.** Firetruck. **l.** Cowboy.

Pre-school children in your community can benefit from the successful auditory testing program outlined by the authors. The testing of well youngsters on a state-wide basis is sponsored by the Council of the Minnesota State Medical Association. The authors have worked out an effective approach that can be readily applied.

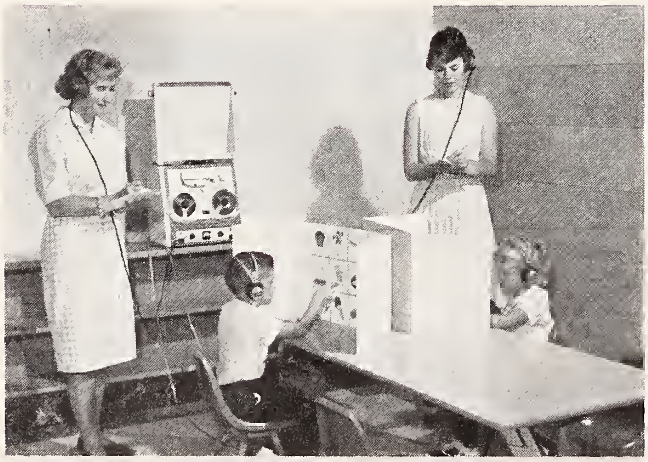

Fig. 2. A typical setting for VASC.

Verbal Auditory Screening for Children

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Since the advent of the audiometer the assessment of hearing in pre-school children continues to be among the most challenging and complex problems facing physicians and audiologists. Conventional technics of group testing of hearing are not usually successful or reliable with 3-to-5 year-old children. Consequently formal testing of hearing is deferred until loss of hearing is detected by the parents, the classroom teacher or until public facilities provide a hearing test. Audiometric tests usually are first given in the schools about the third-grade level. One of the reasons for delayed assessments of hearing is that reliable testing of the very young child among other conditions requires a meaningful situation for him; he must understand what is expected of him; his attention span must make it possible for him to listen consistently and for adequate lengths of time, and he must be motivated to listen for the very soft tones. Pre-school children seldom are capable of meeting all of these requirements. Many workers in the field of hearing evaluation have developed various technics and equipment in attempts to measure hearing acuity of children with pure tones as the standard audiometers do. They are play audiometry, peep or puppet show audiometry, and psychogalvanic skin-resistance audiometry. Although all of these have been used with varying degrees of success, they are limited in several respects. They require an experienced examiner, and often they require a conditioned response rather than a voluntary one. Also only limited numbers of children can be tested.

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The next approach was to develop group hearing tests that employ pure tones. This program is not widely used because it requires trained personnel who often are not available. Perhaps the biggest obstacle is that of not enough trained personnel and an absence of an efficient organization to administer a program of hearing assessment for a large group.

The method for screening the hearing of young children to be described herein is intended to be used by volunteer personnel under the supervision of the Minnesota State Medical Association. It is another attempt at solving the problem of assessment of hearing in the pre-school children. The method does not embody any new ideas but is the result of the pulling together of older ideas, modifying them and trying to eliminate some of the short-comings of previous efforts.[1-4] It is an appropriate group test, for it discovers hearing impairment and also correctly identifies children with normal hearing. This method, which is called "verbal-auditory screening for children" or "VASC," uses controlled speech as the test stimulus instead of pure tones. Hearing for speech is used frequently to check the accuracy of pure tone audiograms. Moreover, speech more easily satisfies the requirements for hearing assessment of young children than pure tones.

VASC uses a screening technic and does not attempt a precise measurement. With this method of screening, loss of hearing from slight to severe and normal hearing can be detected. The speech stimuli consist of spondaic words, which are two syllable words with equal stress on each syllable. The entire test is administered by using a prerecorded and calibrated signal on a special playback tape recorder. The tape recorder is available for free loan to any interested community or responsible parties who want to screen their preschool population. The equipment permits two children to be tested at a time and requires less than 10 minutes. The test presents 12 spondaic words to each ear starting at a comfortably loud level with the loudness decreasing by predetermined steps with each word. The children merely are instructed to point to the picture indicated by the word on the picture board in front of them (fig. 1). A typical screening arrangement is shown in figure 2. The entire hearing screen is developed so that volunteers can administer the tests after a briefing session.

The Preschool Medical Survey of Vision and Hearing was given formal ratification by the Council of the Minnesota State Medical Association in January, 1960. Members of the Committee on Ophthalmology and Committee on Conservation of Hearing of the Association are on the Board of Directors of the Survey. The Survey has the organization, equipment and counselors with which to help any Minnesota group set up a screening program for hearing and vision. Parties interested should contact: Mrs. Grace B. Stoltze, Executive Secretary, Preschool Medical Survey of Vision and Hearing, Route 5, Stillwater, Minnesota.

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Unto each man comes the day when his favorite sins all forsake him.—J. Hay

Value of Spinal Fluid Protein in intraspinal tumors

Spinal Fluid protein is lower in patients with tumors high in the intraspinal canal than it is in patients with tumors found low in the intraspinal canal. The one exception being tumors at the sacral extradural space. The authors present an interesting study of a large number of patients with spinal tumors.

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THE DETERMINATION of protein in the spinal fluid has been used for many years as an aid in the diagnosis of lesions of the spinal cord as well as in the differential diagnosis of protruded intervertebral disk and intraspinal tumors. Many authors have commented, in passing, on the spinal fluid protein in intraspinal lesions.

In 1938[1] a study of the lumbar fluid in 265 cases in which removal of a protruding lumbar intervertebral disk had been performed at the Mayo Clinic revealed that the total protein was less than 40 mg. per 100 cc. in 34 per cent of cases and 40 mg. or more in 66 per cent. Rarely was the protein content of the cerebrospinal fluid more than 100 mg. unless there was severe compression of neural elements with advanced neurologic deficit.

In 1944 one of us[2] (J. G. L.) found an average value for protein of 400 mg. per 100 cc. of spinal fluid in cases of spinal meningiomas, 3355 mg. in cases of spinal ependymomas, and 700 mg. in cases of spinal neurofibromas.

Merritt and Fremont-Smith[3] studied 36 cases of intraspinal tumor and found that the protein content of lumbar fluid varied between 40 and

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3600 mg. per 100 cc. They wrote, "The protein content of the lumbar fluid was below 45 mg. per 100 cc. in 5 patients; between 45 and 100 mg. in 7; between 100 and 1000 mg. per 100 cc. in 22 and more than 1000 mg. per 100 cc. in 2." Elsberg[4] found that the protein value in extradural growths usually was less than 200 mg. per 100 cc. He stated that the protein level often is lower in "meningeal than in the perineural fibroblastomas" and that the protein level often is extremely high in intramedullary tumors.

The cases of 514 patients treated surgically at the Mayo Clinic between 1951 and 1960 for intraspinal tumor were reviewed. The tumors were classified as follows: according to regional location: cervical, thoracic first to sixth segment, thoracic seventh to twelfth segment, lumbar, sacral, and multiple; according to anatomic location: intramedullary, extramedullary-intradural, and extradural; and according to pathologic diagnosis. The determination for spinal fluid protein was recorded in cases in which it was available (some patients were explored on clinical or radiologic diagnosis without spinal fluid examination). The concentration of spinal fluid protein was measured by the sulfosalicylic acid method, quantitated by gross visual comparison with standards.

Results

Tables 1 to 5, inclusive, contain the data obtained from a review of the records. They show the site and pathologic type of tumor in each case, the number of cases in which spinal fluid protein was obtained, and the average spinal fluid protein for each pathologic type and anatomic location. All values for spinal fluid protein are those obtained by analysis of fluid procured by lumbar puncture.

In addition to the tabulated data there were five cases in which more than one tumor of the spinal axis was found; four cases of multiple neurofibromas with average spinal fluid protein of 382 mg. per 100 cc. and one case of multiple meningiomas with a spinal fluid protein of 90 mg. per 100 cc.

The total number of cases of intraspinal tumors found and their relationship to the spinal cord were as follows: intramedullary, 113 cases; extramedullary-intradural, 207 cases; and extradural, 189 cases. The five cases of multiple intraspinal

Table 1

Cervical Tumors (114 Cases)

Pathologic diagnosis	Cases Number	Cases CSF protein available	CSF protein, mg./100cc. Average value	CSF protein, mg./100cc. Range
Intramedullary tumors				
Astrocytoma	24	19	439	35-2000
Ependymoma	13	12	215	20-1000
Ganglioneuroma	1	1	750	----
Lipoma	1	1	65	----
Total	39	33	350	
Extramedullary-intradural-tumors				
Neurofibroma	33	27	298	45-2200
Meningioma	16	16	413	40-2000
Hemangio-endothelioma	2	2	398	45-750
Total	51	45	343	
Extradural tumors				
Carcinoma	7	5	135	50-350
Sarcoma	6	4	122	45-300
Myeloma	4	1	400	----
Chordoma	3	1	280	----
Hemangioma	2	2	83	80-85
Granuloma	1	1	45	----
Dermoid	1	0	----	----
Total	24	14	143	
Grand total	114	92	318	20-2200

Table 2

High Thoracic Tumors, First to Sixth Segment (108 Cases)

Pathologic diagnosis	Cases Number	Cases CSF protein available	CSF protein, mg./100cc. Average value	CSF protein, mg./100cc. Range
Intramedullary tumors				
Astrocytoma	5	5	133	45-200
Ependymoma	4	4	294	25-1000
Cyst	1	1	75	----
Total	10	10	192	
Extramedullary-intradural tumors				
Meningioma	32	30	236	25-4000
Neurofibroma	15	14	1248	200-9000
Total	47	44	557	
Extradural tumors				
Carcinoma	24	13	492	100-1000
Sarcoma	11	9	369	80-1000
Myeloma	9	6	211	85-300
Hemangioma	5	4	410	50-1500
Granuloma	2	2	120	40-200
Total	51	34	379	
Grand total	108	88	434	25-9000

Table 3

Low Thoracic Tumors, Seventh to Twelfth Segment (137 Cases)

Pathologic diagnosis	Cases Number	Cases CSF protein available	CSF protein, mg./100cc. Average value	CSF protein, mg./100cc. Range
Intramedullary tumors				
Astrocytoma	9	8	1436	200-5000
Ependymoma	3	0	----	----
Metastatic medulloblastoma	1	1	500	----
Arteriovenous fistula	1	0	----	----
Total	14	9	1234	
Extramedullary-intradural tumors				
Meningioma	33	31	307	25-4000
Neurofibroma	25	23	508	80-2000
Total	58	54	393	
Extradural tumors				
Carcinoma	27	15	819	20-4000
Sarcoma	22	15	889	150-2400
Myeloma	8	4	175	100-3900
Chordoma	4	2	150	150-150
Hemangioma	3	3	107	90-120
Ganglioneuroma	1	0	----	----
Total	65	39	688	
Grand total	137	102	581	20-5000

tumors were all extramedullary-intradural in location and if they are included the total number is 212 cases.

Comment

Analysis of the foregoing tabulated data reveals several interesting phenomena. The value for spinal fluid protein tends to increase as the level of the intraspinal tumors becomes lower, except that lower values of spinal fluid protein are found with sacral tumors. The average value for protein per 100 cc. of spinal fluid in cervical intraspinal tumors was 318 mg.; for high thoracic tumors, 434 mg.; for low thoracic tumors 581 mg., and for lumbar intraspinal tumors, 909 mg. Although the concentration of spinal fluid protein was found to vary from 30 to 10,000 mg. per 100 cc. in this study, the average for any one group classified was in all instances more than 140 mg.

Another generalization that can be drawn from the data is that a tumor of the same pathologic diagnosis produces a higher concentration of protein in the spinal fluid when it is located low in the intraspinal canal than when it is located in the cervical region. Again sacral tumors are an exception. Cervical astrocytomas had an average value for spinal fluid protein of 439 mg. per 100 cc. while the much rarer astrocytoma of the lumbar region had an average value of 1450 mg. per 100 cc.

The relationship of the tumor to the spinal cord and its coverings also had some effect on the spinal fluid protein. Except for tumors low in the thoracic region the average for spinal fluid protein was greater with intradural tumors than with extradural tumors.

Many pathologic diagnoses were represented. Neurofibromas were the type of primary tumor found most frequently (112 or 21.8 per cent) followed by meningiomas (83 or 16.1 per cent), ependymomas (50 or 9.8 per cent) and astrocytomas (43 or 8.4 per cent). Thus these four types of primary tumors represented more than 56 per cent of all intraspinal lesions in this study. Contrary to the usually accepted information, the value for spinal fluid protein was higher in astrocytomas than in ependymomas (except in the high thoracic region) and it was, as usually accepted, higher in neurofibromas than in meningiomas (except in the cervical region). Although the highest single value for spinal fluid protein found in this series (10,000 mg. per 100 cc.) was found in a lumbar ependymoma, the average value for spinal fluid protein in astrocytomas was greater than that for ependymomas.

Summary and Conclusions

The clinical records in 514 cases of intraspinal tumors have been reviewed and the results have been tabulated and analyzed. The data indicate that the average value for spinal fluid protein is lower in tumors high in the intraspinal canal than in tumors found low in the intraspinal canal, except for tumors at the sacral extradural

Table 4

Lumbar Tumors (126 Cases)

	Cases		CSF protein, mg./100cc.	
Pathologic diagnosis	Number	CSF protein available	Average value	Range
Intramedullary tumors				
Ependymoma	29	24	223	40-10000
Lipoma	6	6	152	25-300
Astrocytoma	5	5	1450	150-6000
Teratoma	3	3	185	55-400
Hemangioma	3	3	140	20-300
Granuloma	1	1	200	----
Cyst	1	1	30	----
Total	48	43	1351	
Extramedullary-intradural tumors				
Neurofibroma	30	25	741	55-4250
Teratoma	4	2	2020	40-4000
Lipoma	3	2	33	20-45
Granuloma	1	1	40	----
Ependymoma	1	1	150	----
Meningioma	1	1	240	----
Total	40	32	849	
Extradural tumors				
Carcinoma	13	12	330	30-3000
Sarcoma	12	8	810	75-3000
Hemangioma	4	4	94	45-160
Granuloma	4	3	320	180-750
Chordoma	1	0	----	----
Teratoma	1	0	----	----
Lipoma	1	1	30	----
Myeloma	1	0	----	----
Ganglioneuroma	1	0	----	----
Total	38	28	381	
Grand total	126	103	909	20-10000

Table 5

Sacral Tumors (24 Cases)

	Cases		CSF protein, mg./100cc.	
Pathologic diagnosis	Number	CSF protein available	Average value	Range
Intramedullary tumors				
Ependymoma	2	0	----	----
Extramedullary-intradural tumors				
Lipoma	6	1	70	----
Neurofibroma	4	4	1410	20-4000
Ganglioneuroma	1	0	----	----
Total	11	5	1142	
Extradural tumors				
Sarcoma	5	4	71	50-160
Carcinoma	2	2	45	40-50
Lipoma	2	2	43	25-70
Neurofibroma	1	1	20	----
Myeloma	1	1	190	----
Total	11	10	68	
Grand total	24	15	426	20-4000

space. Intradural tumors tended to have higher values for spinal fluid protein than did extradural tumors.

The commonest primary tumors found were neurofibroma, meningioma, ependymoma, and astrocytoma. The highest average concentration of spinal fluid protein was found in astrocytomas.

In all cases the spinal fluid for analysis was obtained by lumbar puncture routinely carried out at the second or third lumbar interspace if myelography was contemplated; if it was not, puncture was at the fourth or fifth lumbar interspace.

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WHAT'S YOUR DIAGNOSIS: THE ANSWER

From Page 26

Autopsy revealed infarction of the interventricular septum and posterior wall of the heart with a large septal perforation. When a systolic murmur developes during the course of a myocardial infarction the most common cause is a rupture of the interventricular septum. Other conditions to be thought of are rupture of a papillary muscle, a friction rub misinterpreted as a systolic murmur, mitral insufficiency or ventricular aneurysm. In this case cardiac catheterization was done in the fourth week demonstrating a tremendous left to right shunt at the ventricular level confirming the clinical impression of ruptured septum.

REUBEN BERMAN, M.D.
Minneapolis, Minnesota

PROGRESSIVE CONFUSIONAL SYNDROME

Mental symptoms consisting of amnesia, confusion, hallucination, and delirium, have been described by Putman as occurring in non-traumatic injury to the cervical portion of the spinal cord. The symptoms appeared to relate to cerebral anoxia. Although the respiration was regular and of normal rate, the action of the intercostal muscles was feeble or absent in all cases. Cyanosis was often observed. The oxygen content of the arterial blood was reduced in three of the cases which were studied. This syndrome was associated with chordotomy in three instances, a pathologic fracture from tuberculosis of the spine, spontaneous hematomyelia, and a rapidly progressing sarcoma. All of the patients died.

Robert Durham

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[1] Sollmann, T.: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, ed. 8, Philadelphia, W. B. Saunders Company, 1957, p. 206.

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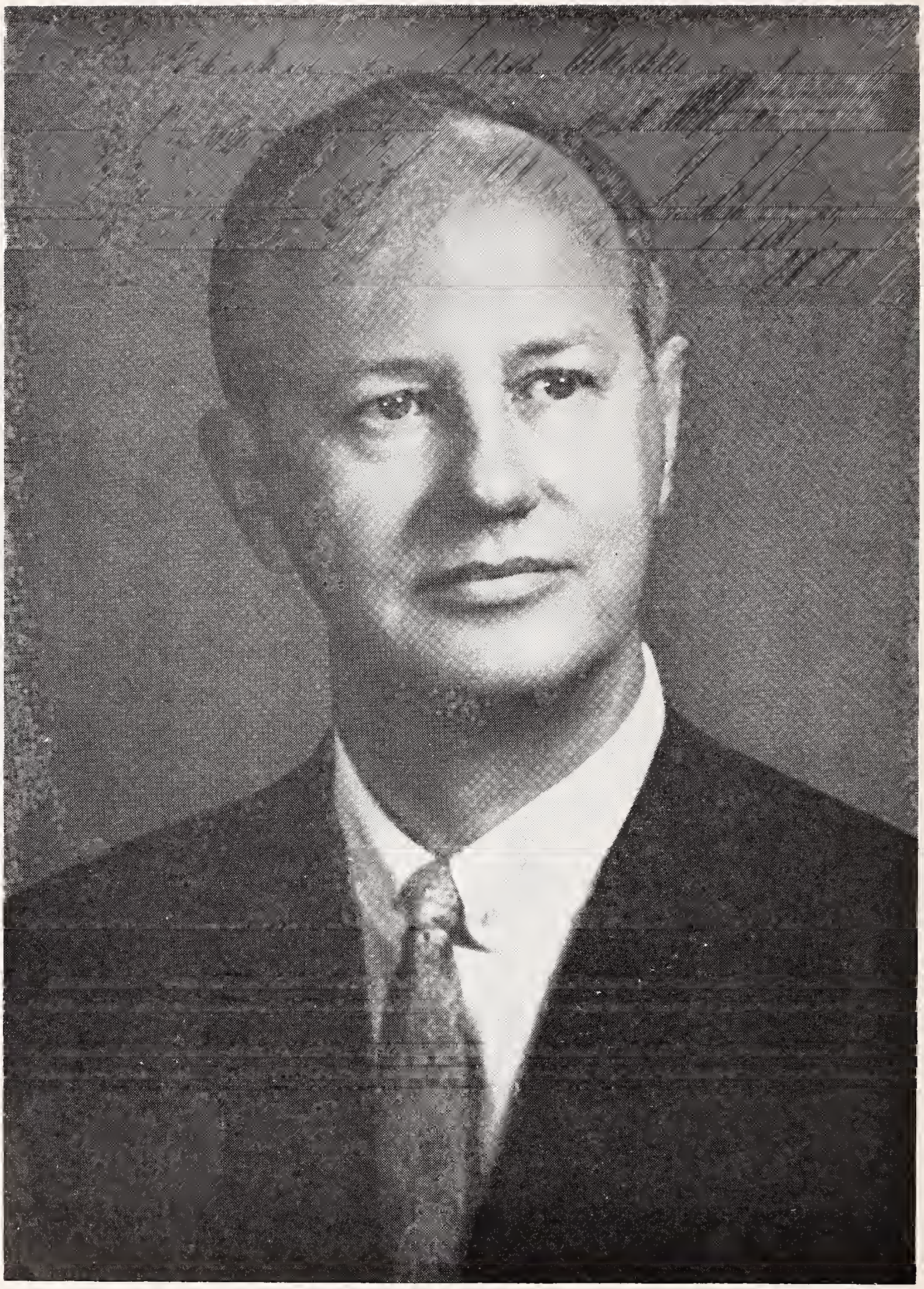


HADDON CARRYER, M. D.

President, Minnesota State Medical Association

President's Letter

MEDICINE IN MINNESOTA

Greetings!

It is with much humility that I assume office as president of the Minnesota State Medical Association. Yet the honor you have given me is one which I deeply appreciate and for which I extend my sincere thanks.

For many years the Minnesota State Medical Association has exerted a potent influence toward the betterment of care for the sick in this state in our nation, and beyond. Many gifted people have worked ceaselessly to achieve this objective.

As for medical practice, the quality of care in Minnesota is second to none anywhere. Among both physicians in general practice and those who have taken up a specialty, the rigid devotion to continuous self-instruction and improvement of service is gratifying.

In the field of teaching, outstanding contributions are being made in Minnesota. The achievments of our University of Minnesota Medical School, generously supported by the Board of Regents, ably directed by Dean Howard and loyally supported by the medical faculty have attracted nation-wide respect. Impressive attention is being given to graduate medical education: More than 1100 physicians currently are enrolled in courses of training in the Mayo Foundation, in the medical school at the university, in our veterans facilities and elsewhere in the state. In excess of 40 percent of those now enrolled in such courses eventually will hold faculty appointments in universities throughout this country and the world. What a heritage physicians of Minnesota are giving medicine!

The record in respect to research is scarcely less resplendent. Approximately $8,000,000 is expended annually to support research projects within our state. Well over a thousand medical scientific publications originate each year from authors in the state of Minnesota.

Yet, although we know that we are in the van of progress in medical practice, education and research, many pressing demands upon our attention still obtain. The coming year undoubtedly will bring a continuation of major discussions and legislation affecting medical care. It is our responsibility to assist, in every constructive way we can, in solving the weighty socio-medical problems which still confront our people. But in so doing we have an imperative to be vigilant and to appraise the implications of all propostals affecting medical practice to assure, so far as we can, that these will in fact benefit the patient.

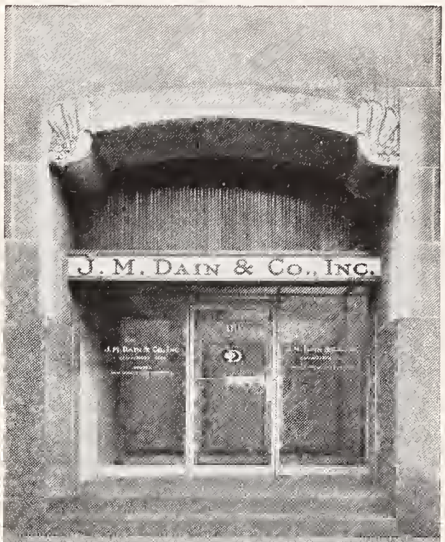
Now, more than ever before, physicians as scientists and leaders in their communities are charged with an added responsibility in the face of the volatile international situation. As delicately poised issues in foreign affairs shift and incline toward catastrophe in this nuclear age, physicians suddenly may become the major source of both medical care and scientific information in their communities, many of which may become isolated. Our participation in civil defense is a duty which must be honored.

The help of each physician in the state will be most urgently needed in 1962. Many challenges will confront us and we must be ready for them. I shall endeavor to discharge creditably those responsibilities with which you have chosen to honor me. Again, thank you for the confidence you have manifested by electing me your president.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association



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Editorials

MUST HISTORY BE REPEATED

Great Britain has announced that its national medical care program cost 2.2 billion dollars in the past fiscal year. This is almost double the amount spent ten years ago. She was required to borrow about a half billion dollars from the United States. She found that this medical welfare state has grown beyond her ability to support and she is therefore making an effort to cut back in order to stave off a devaluation of the pound.

In addition, Great Britain has observed that their British-trained physicians are leaving their country at the rate of about six hundred per year. The supply of physicians is maintained by an influx of foreign physicians largely from India and Pakistan. The British-trained physicians prefer to move to Canada or the United States where their practice is not under government control. They feel that they cannot afford to live on the low wage scale provided by the government which pays only $1306 as the starting pay for full time hospital work.

It seems ironic that the United States should be loaning a half billion dollars to Great Britain to finance an ailing welfare medical program while at the same time this administration seems determined to enact a similar program.

In medicine, as in most other things, we get what we pay for. If the British government is undertaking to provide free health care for everyone, and at the same time support an administrative bureaucracy, it might be expected that the best doctors will have a tendency to depart or leave the practice of medicine, and that the quality of medical service will deteriorate.

Santayana has reminded us that those who will not learn from history are condemned to repeat it.

Carl O. Rice, M.D.
Minneapolis, Minnesota

THE FOUR COUNTY PROJECT

How many mentally retarded children are there? What is the medical profession doing about them?

These are simple questions to ask and hard ones to answer. The Four-County Project for Retarded Children reported by Dr. Eunice Davis et al in this issue of MINNESOTA MEDICINE is an interesting an valuable attempt to provide the answers.

In this four-county rural area, with headquarters located at Fergus Falls, the classical statement of the experts, that between 2 and 3% of the general population is mentally retarded, appears to hold up. The workers found around 1000 youngsters, or 2.2% of the juvenile population of this region, who are mentally retarded.

The problem is more complex than this, however. Of the 264 children referred as retarded whom they studied by careful medical and psychological techniques, the group found that in only 61% of these cases was the diagnosis of mental retardation clear and relatively uncomplicated. Better than half of these cases were "psychogenic," "unknown," or "unclassified." This is no reflection on the workers. The fact is that mental retardation is poorly understood and those who work in the field appear to have increasing difficulty in defining it in proportion to their experience. The longer one is in the field the less he understands; the question "What is mental retardation?" is like the will o' the wisp.

"How do
you feel
lately, Mrs. K?" *"Well, Doctor, some customers stil
'get on my nerves'... but somehow this doesn't bother m
as much... I feel better now and people seem easier to
get along with..."* "Feel sleepy?" *"No, nothing like that.*

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Even more striking are the findings in the other 39% of the youngsters referred in whom the "simple" finding of mental retardation is complicated by a wide variety of emotional, motor, and sensory disturbances. Half of the total group was found to have significant visual, auditory, dental, and speech defects and seizures in various combinations. More importantly these defects (1) had a significant bearing on the total clinical condition of the youngster, and (2) had not received adequate medical attention in some cases.

The importance of emotional components and outright psychiatric disorders as a dimension of mental retardation is very evident. Between a quarter and a third of the total group were found to have emotional disorders of some degree, and a significant number of these were found to be overtly psychotic. In how many more of the "uncomplicated" cases emotional factors affect the relationship of the child with his parents, siblings, or friends is not stated and would undoubtedly be difficult to assess.

Are physicians adequately oriented to mental retardation? The answer must be no. The authors avoid direct comment on this issue, but the implications are clear enough. They also rightly and encouragingly point to the participation of the medical community in this particular project. This would suggest that where the orienting or educational apparatus exists, physicians will respond and can learn.

The problem of institutional care for the mentally retarded is serious and burdensome. Our Minnesota institutions for the retarded, in a state well-advanced in institutional bed space proportionate to the population, cannot keep pace with the increasing demand for these facilities. The present waiting list for institutional bed space is around 1000. Even with the addition of space at the Brainerd hospital, there will still be, if we take into account new additions to the waiting list month by month, a substantial number awaiting space by the time that institution is completed. This suggests that, as things are going, the state will have to continue building institutions for the retarded in perpetuity.

What is to be done? The findings of the Four-County Project suggest one answer: a further development of educational and medical and nursing care programs at the community level. Studies in the State Department of Public Welfare also suggest that many patients currently in our state institutions could be returned to the community if adequate educational, social, medical and housing programs in the community could be implemented. It is clear that the medical profession must take a substantial share in providing the necessary community leadership in such undertakings.

There exists a significant lag in medicine's understanding of the hazards of early institutionalization and the advantages for the patient and his family of maintaining family and community ties as long as possible. All too often physicians, as soon as the diagnosis of retardation is made, urge parents to seek immediate institutionalization of their child. The prime example of this process is seen in instance of mongolism. The traditional medical approach here is to have the child hustled off as soon as the diagnosis is established, which means at birth or shortly thereafter. This ultimately adds to stigmatization, guilt, and the burden of public care. Many examples of this are to be found not only in mongolism but in the wide variety of other conditions assumed under the term "mental retardation." Even if the child may eventually require custodial care, it is known that early institutionalization at best is bound to cause further crippling and conversely that parents keeping their child can if properly counseled obtain a deep measure of satisfaction. In this instance physicians are often out of step with the times. A recent article by Richard Tudor, pediatrician of Minneapolis, deals in an objective and scientific manner with the problem.

The Four-County study clearly illustrates the complexity and mystery of mental retardation. No medical scientist or therapist—neurologist, pediatrician, psychiatrist, internist, or general practitioner—could fail to be aroused by the intense challenges of this field. Here is a real opportunity for pioneering work to be done. We congratulate Dr. Davis and her co-workers in their contribution.

David J. Vail, M.D.
Medical Director
Department of Public Welfare
State of Minnesota

Tudor, R. B., What to Tell Parents of a Retarded Child, Journal-Lancet 79:196, 1959.

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THE SURGICAL TREATMENT OF CONSTRICTIVE PERICARDITIS

In most cases of chronic constrictive pericarditis despite intensive medical management, the course of the disease is usually progressive unless the heart can be freed by surgery from its surrounding, relatively unyielding capsule.

The classicial description of chronic constrictive pericarditis is that of a heart bound by a fibrotic pericardium with obliteration of the potential pericardial space. This results in a limited distention and filling of the cardiac chambers and in reduced cardiac output. The myocardium also may become damaged by compression. Depending upon the point of progress of the disease, there may be present various degrees of ascites, hepatomegaly, dyspnea, pleural effusion, and distention of the jugular veins. An elevated venous pressure, decreased pulse pressure, a paradoxical pulse, and an abnormal circulation time are frequently observed. The electrocardiogram may demonstrate low voltage with flattening or inversion of the T waves. The heart is usually "quiet" on fluoroscopy and roentgenograms occasionally demonstrate peripheral areas of calcification. Cardiac catheterization often discloses an elevated end diastolic pressure in the right ventricle with a dip and plateau formation. A rise in pulmonary artery pressure is frequently recorded.

Although reasonable surgical results are obtained in many cases, the constrictive stage of the disease is the most difficult for the surgeon to effectively combat. It is essential that the heart be relieved of its slowly retracting, fibrotic capsule for it to pump efficiently. The establishment of a plane of cleavage in the obliterated pericardial sac for this purpose, however, presents a considerable technical problem. There is also the danger of accidental perforation of the cardiac chambers or injury of the coronary vessels. The resultant mobilization of the heart is often less than desired when accomplished in the late stage of the disease. The myocardium at this point also may be permanently damaged by the disease process and the patients are frequently very poor risks for surgery.

Because of such considerations, the present trend appears to be toward an earlier surgical intervention before the constrictive process takes place. There are an increasing number of reported observations which point out the relationship of chronic tuberculous pericardial effusion, recurrent idiopathic effusion, and severe traumatic hemorrhage into the pericardial sac to the later development of chronic constrictive disease. Resection of the pericardium in these earlier phases of the disease is advocated with apparently improved results. Good clinical judgment, particularly in regard to prognosis, must certainly be exercised in the selection of patients for such surgery.

The incidence of tuberculous pericarditis is decreasing with the use of intensive antimicrobial therapy. Where such a chronic effusion does persist for several weeks despite medical therapy, a fibrinous deposit usually occurs in the pericardial sac which later may result in fibrosis of the wall. It appears that resection of the pericardium at this point is attended by much less risk than in the later constrictive phase, providing any associated pulmonary disease is under reasonable control and antimicrobial therapy is maintained.

Early pericardiectomy apparently results in less morbidity in the "idiopathic" and "relapsing" types of chronic effusions, although it is difficult to obtain adequate statistics because of the prolonged nature of the process. Periocardiocentesis frequently relieves tamponade only temporarily and is often followed by a recurrence of the effusion. The course may be marked by phases of pain, fever, malaise, friction rub, leukocytosis, electrocardiographic changes, reversal of the plasma albumin-globulin ratio, and changes in the cardiac contour. Angriography may aid in clarifying the presence of effusion. These findings may subside with nonspecific therapy and rest only to recur with resumption of physical activity. Where repeated episodes or persistent effusions occur despite therapy, pericardial resection is advocated before constriction results from the chronic inflammatory process.

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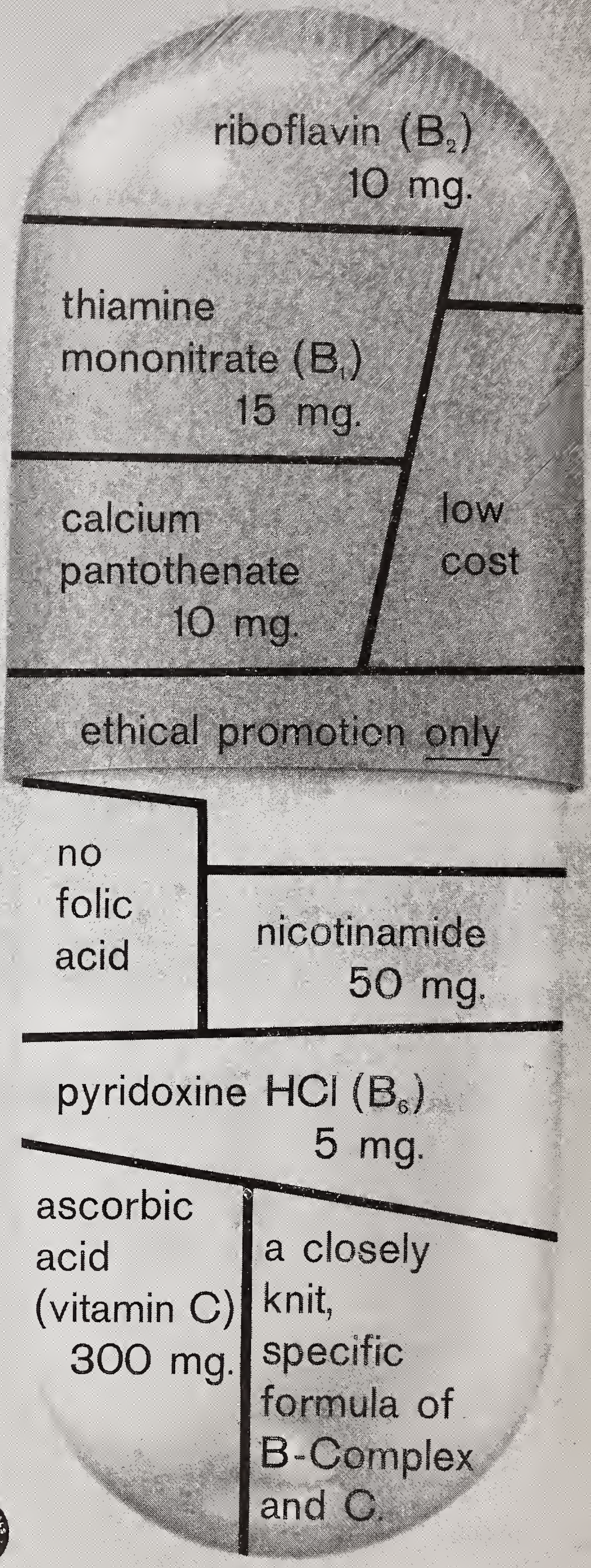

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Pericardiectomy is contraindicated in simple acute effusions and myxedematous effusions because they usually subside with adequate rest and medical therapy. Pericardial resection, likewise, is not advocated for rheumatic pericardial effusions because of the danger of rheumatic activity. On the other hand, it is well to remember that the persistence of infection or the presence of pus in the pericardial sac increases the risk of constrictive pericarditis.

There is an increasing number of reports of constrictive pericarditis resulting from penetrating and nonpenetrating injuries of the heart with bleeding into the sac. The physician may be easily misled by a cardiac silhouette that is gradually decreasing in size over a period of time. He may believe that absorption is taking place whereas constriction may be developing from fibrin and fatty deposits remaining after absorption of the serum. It seems logical in the presence of a significant injury of the heart, where tamponade cannot be easily controlled or a large clot formation evacuated by pericardiocentesis, that early operation is indicated to remove the coagulum and fluid as well as to repair any traumatic defect. It is well to remember that adhesive pericarditis can be, at times, a stage in the development of the constrictive form.

A longitudinal sternal splitting incision allows satisfactory visualization for pericardiectomy in the presence of a chronic effusion and usually avoids entry into the pleural cavities. A wide resection of the pericardium is carried out over the great veins and cardiac chambers including the diaphragmatic surface. It is not necessary to attempt to resect the posterior covering of the left auricle.

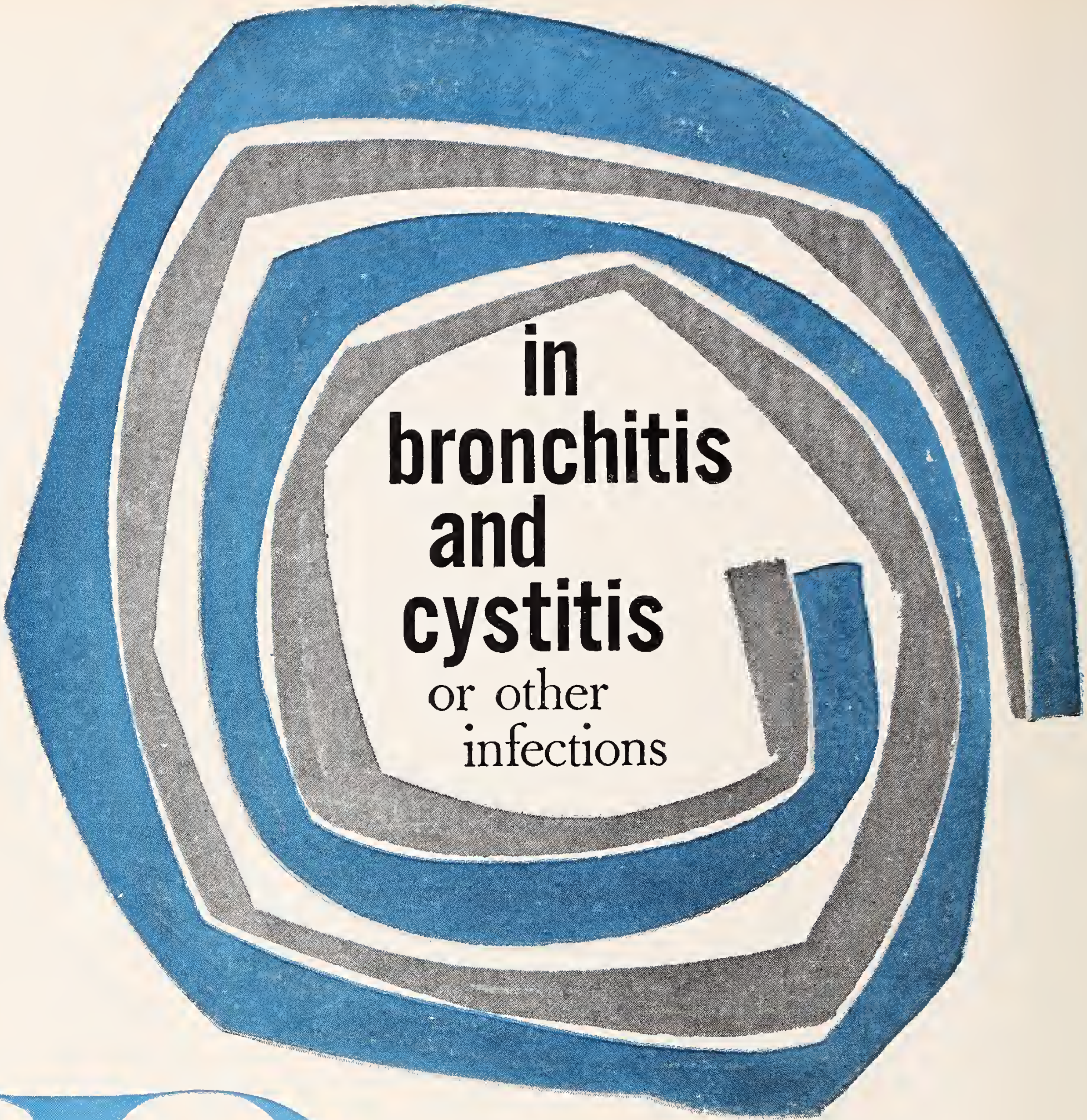
The most commonly used surgical approach for the constrictive type of disease is through a left anterolateral incision. It can be extended transversely across the sternum or extended upward for better visualization during the difficult dissection over the thin walled right side of the heart. This stage of the disease usually presents an extremely dangerous and difficult problem as cleavage planes are frequently indistinct. It is often better to remove the outer covering and then the thin epicardial layer through which the coronary vessels may be observed and protected. Dissection is dangerous in the auriculo-ventricular groove and is not attempted as a rule. It is essential to mobilize the ventricles as much as possible. Opinion differs as to the extent of resection necessary over the auricles and great veins. It would seem best to individualize this dissection according to the degree of restriction present in a particular case. Accidental penetrations of the chambers and vessels must be carefully repaired. The beneficial results of mobilization of the heart in constrictive pericarditis is often less than desired. This lends added weight to the argument for early pericardiectomy.

John V. Thompson, M.D.
Indianapolis, Indiana

BENEFACTORS OF MEDICINE

Medicine learned from a monk—how to use antimony
From a Jesuit—how to cure Ague
From a Friar—how to cut from stone
From a soldier—how to treat gout
From a sailor—how to keep off scurvy
From a postmaster—to sound the Eustatian tube
From a dairy man—how to prevent smallpox
From an old marketwoman—how to catch the itch insect

Oliver Wendell Holmes—1867



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Abstracts and Briefs

PANCREATIC SURGERY

For a pseudocyst of the head of the pancreas located in a position juxtaduodenum, Mercadier recommends a transduodenal approach opening the wall of the duodenum adjacent to the cyst and creating a fistulous communication on the inner duodenal wall. He has done this procedure in eight cases and cites no post-operative hemorrhagic complications, argues that the duodenum, being the normal site of reception of pancreatic juice, should be more physiologic. He recommends an extensive mobilization of the duodenum by the Kocher maneuver and by placing the cavity duodenal anastomosis at the declivitous point of the cystic collection, no reflux of food material should develop. Therefore, they have had none of the complications of other internal marsupialization procedures such as suppuration with abscess of the pancreas, hemorrhage or reactivation of acute pancreatitis.

In consideration of the hazards of this procedure, injury to the vascular circle of the superior pancreaticoduodenal artery is avoided by staying below it, injury to the choledochus is unlikely since the cyst displaces it posteriorly in most instances. The exact position should be obtained by cholangiography. The os of the anastomosis is placed below the papilla of Vater.

The author recommends first opening the external surface of the duodenum by a long longitudinal incision, identification of the papilla of Vater, injection of the cyst with radiopaque dye and identifying the declivitous point in the cyst by a forcep in the cystic cavity pushed toward the duodenum.

A catheter is placed into the cystic cavity through the cystoduodenal anastomosis and out the duodenum by a counter incision after the method of Volcker with the drain being exteriorized by counter incision in the right flank.

Eight cases are outlined in detail with photographs of x-rays of the injected cyst and biliary tree.

This procedure has the appeal of simplicity and by careful adherence to the safeguards as outlined by the author, this should be a very useful procedure in the cases of cysts of the head of the pancreas where its anatomic location permits this approach.

J. H. STRICKLER, M.D.
Minneapolis, Minnesota

"Cystoduodenal Anastomosis for Cephalic Cyst of the Pancreas" Maurice Mercadier, M.D., Paris, France. Annals of Surgery 153:81, Jan. 1961.

ESOPHAGEAL CARCINOMA IN THE ELDERLY PERSON

Since carcinoma of the esophagus eventually prevents swallowing, death is inevitable unless ingestion of food is made possible by surgery. In the past this disease was looked upon as the "Commencement de la fin," and especially in the aged palliative procedures were done with the result of prolonging life with suffering.

The authors feel that a more aggressive attitude is indicated. Palliative procedures are a poor substitute for possible cure and an acceptable operative mortality rate can be attained with definitive surgery.

Carcinoma of the esophagus is rare before age 50, and the percentage of people over 70 with this disease varies from 20.7% to 30.4%.

Diagnosis may be delayed by some of the accompaniments of age such as loss of teeth or vascular, inflammatory, traumatic and obstructive states. Accurate diagnosis of persistent dysphagia calls for prompt radiologic studies.

The authors report ten cases ages 75 to 85 of which nine were resected and in one a prosthesis was used. The immediate operative mortality was one case, who died of pneumonia on the 4th day. The case in which the prosthesis was used left the hospital against advice on the 8th P.O. day and was lost to follow up, 3 cases lived 1 to 1½ years; 2 patients lived 2 years. and 3 patients lived 3 years. Death was due to causes other than carcinoma in at least four of the cases. One patient is living and well 2 years after surgery and 2 are living and well 3 years after surgery. All who survived were able to swallow without difficulty and without subsequent dilations.

GORDON C. MacRAE, MD.
Duluth, Minnesota

Berman, J. K., LaLonde, A. H., and Fisher, C.: "Esophageal Carcinoma. Treatment in Patients of 75 to 85 Years of Age" Archives of Surgery 82:353-359, March, 1961.

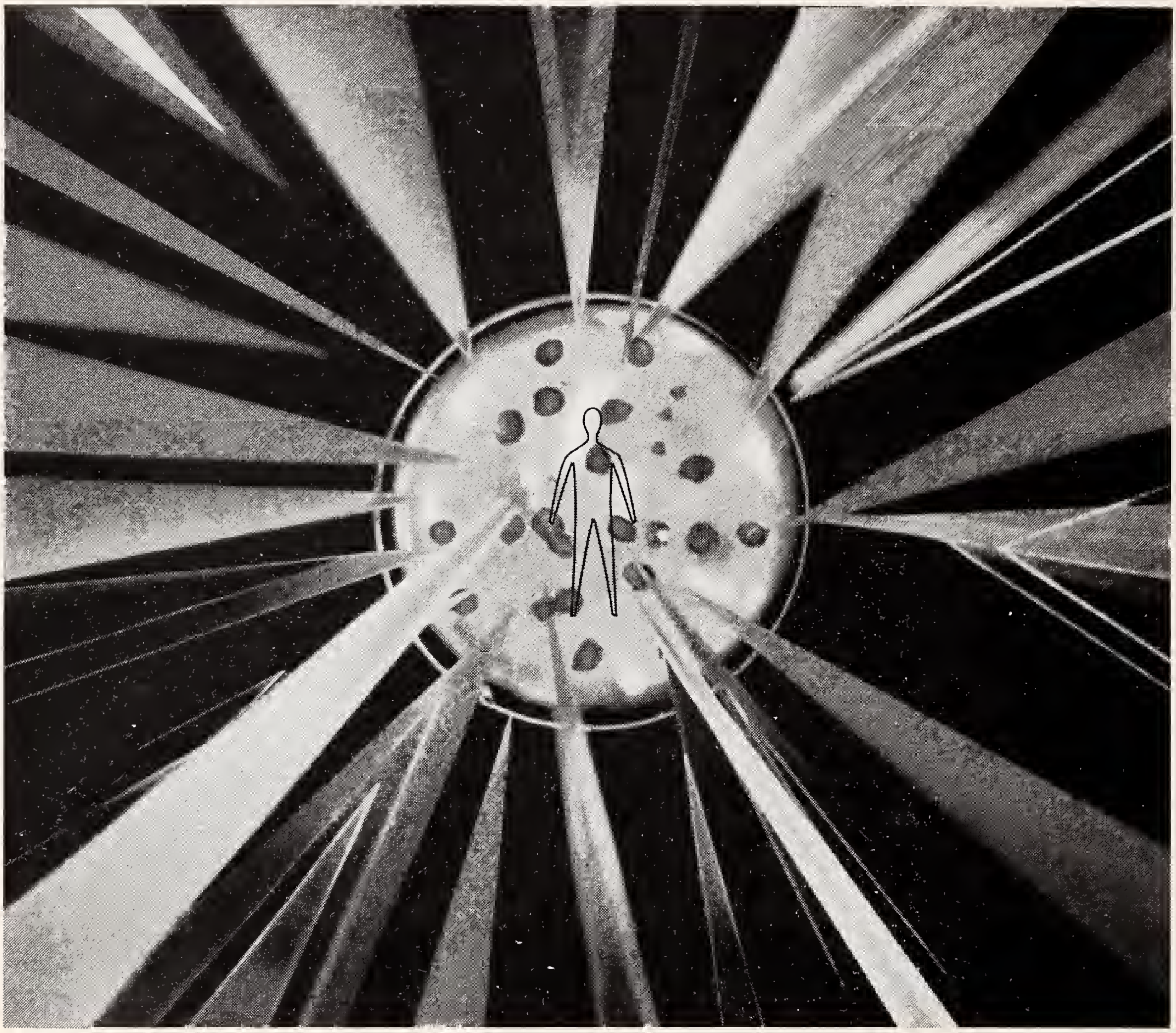
MERCURY POISONING

Kantarjian of Iraq reports on 11 cases of chronic mercurialism with a neurologic picture akin to amyotrophic lateral sclerosis. All of these patients had consumed bread prepared from wheat treated with a seed fungicide called Granosan M (Dupont). The period of ingestion was approximately two to three months.

Despite the fact that the farmers in Iraq were repeatedly told that the fungicide in the wheat seed contained a toxic ingredient and that such wheat was suitable only for planting and cultivation, not for consumption, many of them used such wheat in the preparation of bread.

In addition to weakness and wasting of the limb musculature, fasciculations were present in the atrophic muscles. In some patients pyramidal tract signs were observed. Sensory signs were absent. It is to be noted that no involvement of the bulbar musculature was observed despite the progression of the disease for the six to eight months of follow-up.

The patients had commonly a blue line at the gum margin and in a few an erythematous rash was noted. Other symptoms were sore mouth, metallic taste, anorexia, epigastric discomfort, vomiting, diarrhea, and constipation. Ordinarily the diagnosis is made by examination of the urine for an excessive amount



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of mercury; in these patients the diagnosis was confirmed by detection of mercury in samples of the hair and nails.

In 1954 I. A. Brown of Minneapolis reported 6 patients with chronic mercurialism as a cause of the clinical syndrome similar to amyotrophic lateral sclerosis from the use of Ceresan which is used as a seed fungicide. One of his patients succumbed with necropsy revealed the findings of amyotrophic lateral sclerosis. Brown believed that BAL, which increased the urinary output of mercury, might be beneficial.

R. G. SIEKERT
Rochester, Minnesota

"A Syndrome Clinically Resembling Amyotrophic Lateral Sclerosis Following Chronic Mercurialism" Artin D. Kantarjian: Neurology 11:639, July, 1961.

THE KIDNEY IN PREGNANCY

The clinical syndrome of edema, hypertension, and proteinuria occurring in the latter half of pregnancy has long been recognized to be of multiple etiology.

The authors have extended their investigation with a study comparing the clinical picture and the light and electron microscopic findings in a group of patients with toxemia of pregnancy. In the pure nephrotic state in pregnancy, electron microscopy reveals a severe distortion of the epithelial foot processes with occasional areas of thickening of the basement membrane, whereas the same tissue examined under light microscopy was normal. The degree of proteinuria seemed to be related to the severity of the disturbance of the epithelial foot processes.

Glomeruli from patients with preeclampsia-eclampsia when studied by light microscopy revealed an ischemic, swollen, bloodless appearance, with apparent basement membrane thickening; by electron microscopy it was observed that this appearance was due to marked swelling of the glomerular capillary endothelial cells with resultant narrowing of the capillary lumina. A slight to moderate epithelial foot process disturbance was also noted. There was no evidence of basement membrane thickening or endothelial proliferation.

Study of five week post partum repeat biopsy material revealed that the glomerular endothelial swelling had tended to subside.

Renal biopsys of some toxemic patients revealed chronic glomerulonephritis. Here the predominant lesion was that of endothelial proliferation and hyalin deposition.

A renal biopsy in a pregnant patient with diabetic glomerulo-sclerosis with an associated nephrotic syndrome revealed complete hyalinization of many glomeruli and marked thickening of the basement membrane, in many loops five to ten times the normal thickness.

This interesting study, as well as a similar one previously reported by Spargo, et al. (Arch. Path. 68:593, 1959), demonstrates very well the investigative approach which will at last allow a specific diagnosis to be made in that confusing collection of patients grouped together under the heading of toxemia of pregnancy. Although none of the glomerular lesions were specific for any particular disease, a given process or a particular combination of processes predominated in each disease. The author's findings add further support to the existence of the "reversible toxemic lesion" described by Dieckmann (Am. J. Obst. & Gynec. 73:1, 1957).

CHARLES J. McCARTHY, M.D.
St. Paul, Minnesota

Hopper, James Jr., Farquhar, M. G., Yamauchi, H., Moon, H. D., and Page, E. W.: "Renal Lesions in Pregnancy" Obst. and Gynec., 17:271-293, March 1961.

THYROID CARCINOMA

The continuing study of patients with malignant thyroid disease treated at the Illinois Research and Education Hospitals is brought up to date in this review. During the period January 1936 to May 1959, 128 patients with thyroid cancer were seen, and 82 of these received their initial therapy in this institution. The study includes all of the patients followed for five years or more.

A previous review covering the period of 1936 to 1944 had disclosed cancer in 24% of patients with a single non-toxic nodule, and 11% of patients with multiple non-toxic nodules. Surprisingly, for the period 1952 to 1959 malignant disease has been encountered in only 8.5% of patients with a solitary nodule and 5.1% of patients with multiple nodules. It is the author's impression that this represents a true decreased incidence rather than altered selectivity. The incidence in children remains high at 31.1%.

Another interesting finding has been the observation of malignancy in two patients with chronic thyroiditis. Although the incidence of malignancy is very low in toxic goiters, it does occur, and the authors still prefer surgical excision of toxic nodular goiter in preference to radioactive iodine, unless specific contra-indications to surgery exist.

The authors recommend surgical exploration of all patients with thyroid nodules. In order to excise the lesion with an adequate margin of normal thyroid tissue they usually perform a total lobectomy. For bilateral nodules they perform a bilateral subtotal thyroidectomy. Radical surgery is not indicated, in their opinion, for the very anaplastic and undifferentiated thyroid cancers. The known tendency for multicentric origin of carcinoma of the thyroid makes near total thyroidectomy advisable. Cervical lymphadenectomy should be part of an operation intended to remove all tumor. Other forms of therapy such as radiation, radioactive iodine, and dessicated thyroid may be helpful adjuncts, but should not be regarded as substitutes for adequate surgery.

Survival rates have also improved in the subsequent studies. Currently the over-all five year survival rate for all patients seen is 62.8% and the ten year rate is 37.1%. Both of these figures represent great improvements over the previously reported series.

The passage of time has resulted in two changes in the experience of this group with thyroid cancer. Not only is the actual incidence decreasing, but survival rates have been much improved. One must recognize the transient reliability of current data and retain the mental pliability adaptable to changing concepts.

ROBERT N. HAMMERSTROM, M.D.
Minneapolis, Minnesota

"Malignant Thyroid Disease" Fowler, E. F., Majorakis, J. D., and Cole, W. H. Arch. Surgery 82:925, June, 1961.

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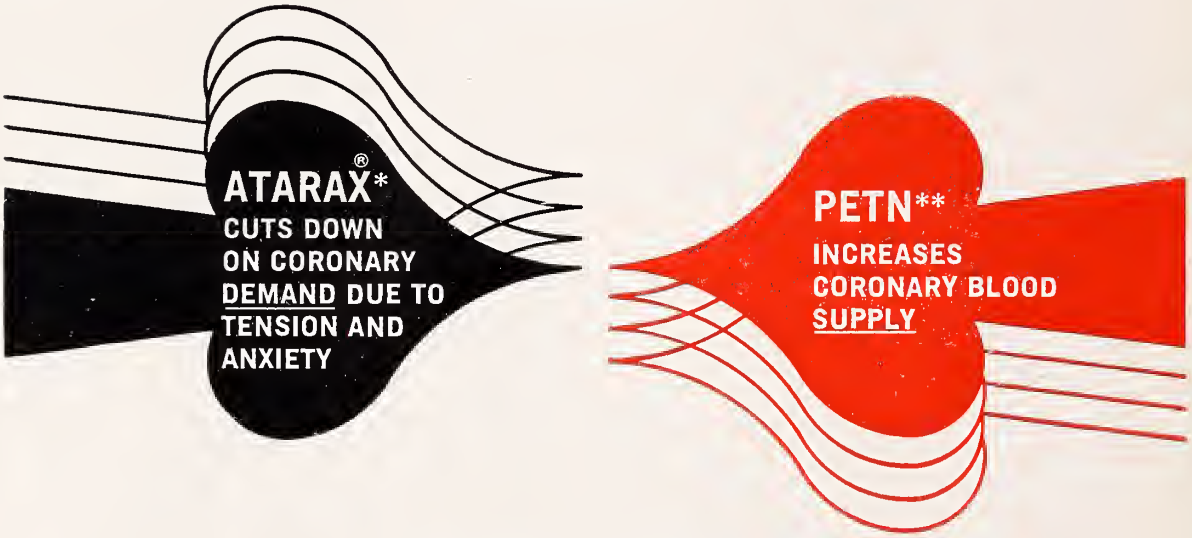
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1. Clark, T. E., and Jochem, G. G.: Angiology 11:361 (Aug.) 1960.

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Book Reviews

DIFFERENTIATION BETWEEN NORMAL AND ABNORMAL IN ELECTROCARDIOGRAPHY — by Ernst Simonson, M.D. C. V. Mosby Co., St. Louis, Mo., 1961, 328 pp. $13.50.

The first and most important step in electrocardiographic interpretation, as Simonson states, is the differentiation between "normal" and "abnormal." It is curious that there is such a preponderance of information in cardiac literature of what Simonson calls the second step, that is the separation of various abnormalities. Simonson has addressed himself to the task of defining what is normal in the electrocardiogram discovering the limits of normality, establishing criteria for various population groups, and exploring the indefinite border between the normal and the abnormal. He has achieved what will probably be the definitive text of normality for the present twelve lead electrocardiographic era.

As Kossman points out in his foreword, "There is nothing like (this book) in existence presumably because no one but Dr. Simonson has had the fortitude, perseverance, and skill to get the answer to a difficult question now more than half a century old—to-wit, what is a normal electrocardiogram?"

Major consideration is given to minor changes which often lead the interpreter to the conclusion that the electrocardiogram is "borderline." Simonson attempts to narrow the field of the borderline. He has shown the inadequacy of our commonly used normal electrocardiographic limits, inadequate first in sample size but also in the lumping together of sexes, of age groups, and of other population differences. Many of the standards commonly used were defined with other lead systems and transferred to the present twelve lead electrocardiograms commonly used today.

This book will undoubtedly reduce some errors in current electrocardiography: missed diagnoses of pathology, and more important, false diagnoses of heart disease in normal individuals. The work with its many figures, tables, and informative appendices is a veritable "Handbuch" for the present generation of electrocardiographers.

REUBEN BERMAN, M.D.
Minneapolis, Minnesota

MEDICAL PHARMACOLOGY—By Andres Goth, M. D. 551 pages, illustrated. The C. V. Mosby Co., St. Louis, Mo., 1961.

In George Bernard Shaw's play, "The Doctor's Dilemma," a physician was faced with the problem of choosing the patients to receive treatment with his small supply of a life-saving opsonin. The modern doctor's dilemma seems to be the choice of a drug from the vast array of products that seem to be multiplying in a geometric fashion.

This book, primarily intended for medical students and physicians, has been kept to modest size by the author by attempting to stress basic concepts and principles of pharmacology rather than detailed, exhaustive description. The presentation is logical and clear, and the diagrams and illustrations are good. The book contains helpful discussions of such recent developments as monoamine oxidase inhibitors, oral hypoglycemic agents, the new diuretics and antihypertensive agents, and the various tranquillizing and anti-depressant drugs. The basic physiological and biochemical aspects of drugs are stressed.

In a book of this small size there are bound to be omissions, and for a more complete review one should turn to the standard texts. The book is somewhat weak in clinical applications, such as indications, contraindications, and specific doses of various drugs. It is unfortunate that controlled, clinical evaluation, particularly by the double-blind approach is not stressed. However, for the physician or medical student who would like a brief review of modern pharmacology, this book can be recommended.

DAVID A. BERMAN, M.D.
Minneapolis, Minnesota

MANAGEMENT OF OBSTETRIC DIFFICULTIES, J. Robert Willson, Sixth Edition, Mosby.

All practitioners concerned with care of obstetric patients, especially general practitioners and specialists, will appreciate and refer to this new addition of an established guide book which has gained a deservedly high reputation during the last twenty odd years.

It is with a nostalgic note of sorrow that no mention was found in this edition of Doctor Paul Titus who was the original author of the book with this title.

Clear and concise text, excellent format and printing, excellent illustrations combine to make this a readily readable reference book.

It makes no pretense for completeness. Many suggested methods of management and regimens of treatment reflect the personal opinions of the author and the Temple University Medical School Staff. The detailed descriptions of the use of local anesthesia are noteworthy.

Quite obviously some may disagree with treatment suggestions as so outlined.

This reviewer finds exception to use of morphine for analgesia in labor, the emphasis on the dangers of caudal and spinal anesthesia in one chapter, and the rather enthusiastic endorsement of "saddle block" anesthesia in another.

Diagrams detail a lower segment cesarean section with a longitudinal incision in the lower uterine segment. Most obstetricians prefer a transverse incision as originally popularized by Munro Kerr.

In the discussion of contracted pelvis, more attention and space is devoted to inlet contractions rather than the more important midpelvic contractions.

In the management of breech deliveries, no mention is made of the Bracht maneuver which many believe is a significant advance.

These criticisms of the reviewer should not in any way detract from the over-all value of the new edition of this very worthwhile guide for complicated obstetrics.

MANCEL T. MITCHELL, M.D.
Minneapolis, Minnesota

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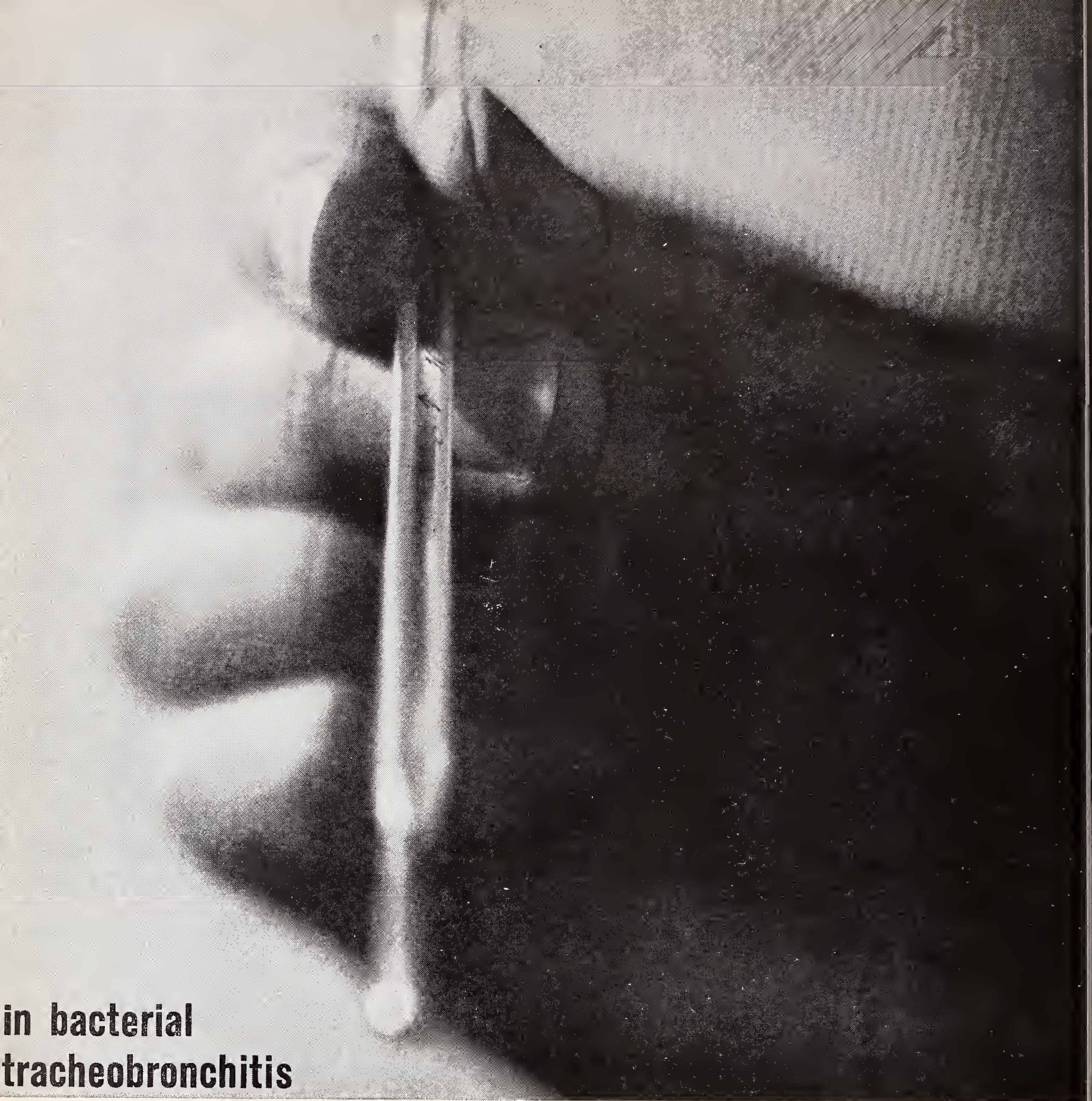

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Letters to the Editor

Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section do not necessarily represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

To the Editor:

I have just read the November issue of Minnesota Medicine and would like to make a few comments regarding the summary of "Peutz-Yaeger syndrome" which appeared on page 471.

The summary of this syndrome as presented is essentially correct with the exception in the fourth paragraph which reads: "Low grade malignant degeneration has been found to occur in 20 percent of reported cases," and in the fifth paragraph, which reads: "resection of the involved area of intestine is indicated as a prophylactic measure and becomes imperative when severe bleeding or obstruction develop." It is correct that malignant degeneration has been reported in 20 percent of cases. However, in close examination of all of these cases, to the best of my knowledge, no local or distal spread has been proven, and there has never been a death directly attributable to a malignancy arising in one of these polyps in this syndrome.

More recent studies have suggested that these polyps are actually congenital anomalies in the form of hamartomas, and are completely benign in nature. Surgery then deserves more discussion in the light of this knowledge, for in some instances radical resection of the small intestine has actually been performed to prevent the future development of cancer. This, of course, would not seem to be indicated and surgery should be conservative at all times. In many instances, these polyps are so extensive that only complete removal of the intestine would give assurance against their recurrence. I think that the generally accepted principle of surgical management today would be one which attempted to remove as many of the polyps as possible without resection of the bowel itself. This can be accomplished by multiple enterotomies and polypectomies. Occasionally, it is more feasible to resect a small segment of bowel where there may be many polyps present, but in general, extensive resections should be avoided.

In brief, it would appear that the conclusions mentioned in your summary are somewhat contrary to the latest concept of this syndrome.

LLOYD G. BARTHOLOMEW, M.D.
Mayo Clinic
Rochester, Minnesota

Editor's Note: For a more detailed review of the Peutz-Yaeger syndrome, I refer you to Dr. Bartholomew's manuscript in Gastro-enterology, 32:437, 1957. Because of his interest and extensive studies in this field, his opinion is well respected.

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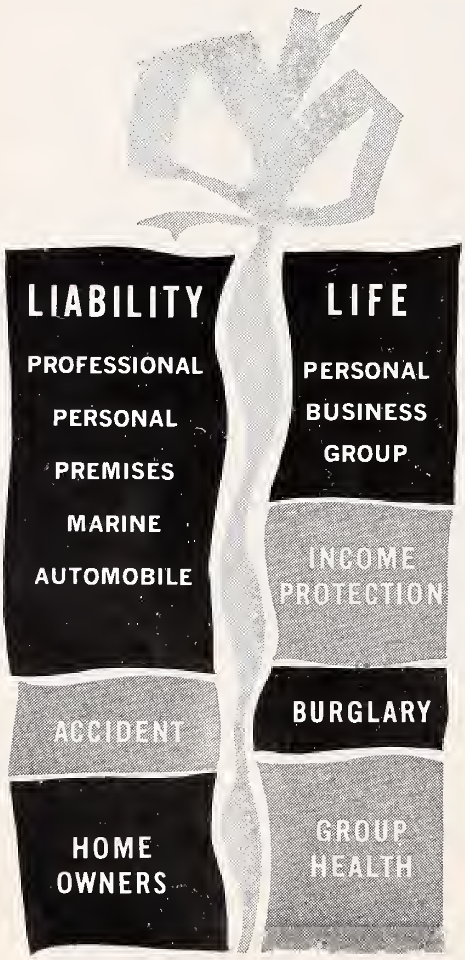
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1961 Income Tax Guide for Physicians

This article is specifically designed to familiarize you, the Minnesota physician, with the most important tax-saving opportunities which might be available to you, and to point out some of the most troublesome tax problems which ordinarily arise in the conduct of a medical practice. The author points out that this article should not be considered an adequate substitute for the services of professional tax counsel. To begin with, this article is written to inform, not to advise, as the tax laws are subject to uncertain application with respect to certain matters discussed herein. Moreover, the author has in no sense attempted to exhaust the field of income taxation. It is assumed for purposes of this article that you file your income tax returns on the calendar-year basis and that you have been a resident of Minnesota for the full year. Unless the contrary is stated or otherwise indicated, statements herein are applicable for both federal and Minnesota income tax purposes.

JOHN S. HIBBS, LL.B*
Minneapolis, Minnesota

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*Member of the Minnesota State Bar Association and associated with Dorsey, Owen, Barber, Marquart & Windhorst.

PERSONAL EXEMPTIONS AND DEPENDENTS

Generally, the exemptions and credits allowed taxpayers are set forth and sufficiently explained on the federal and Minnesota income tax returns. Exemptions and credits pertaining to dependents, however, are somewhat more complicated and less obvious. For federal income tax purposes, you may claim an exemption of $600 for each person who is dependent upon you, if the following five tests are met:

(1) **Gross Income.** Generally, a person may not be claimed as a dependent if he received gross income of $600 or more for the year. The gross income test is inapplicable, however, in the case of a child, stepchild, or legally adopted child who is under 19 or who, regardless of age, is a full-time student during each of five months during the year at an educational institution which maintains a regular faculty and normally has a regularly organized body of students in attendance.

(2) **Support.** You must have contributed more than one-half of the support of the dependent, except in a case where there is a "multiple support agreement." Support includes amounts expended for board, lodging, clothing, cost of education, medical and dental care, cost of entertainment, and cost of travel and transportation. It does not include amounts spent to purchase so-called "capital items" other than clothing.

Scholarships. Amounts received by a child, stepchild, or legally adopted child who is a student, as scholarships for study in an educational institution should not be taken into account in determining the total cost of his support. On the other hand, amounts received by veterans for tuition payments and allowances while attending school and appointments to Service Academies are not considered scholarships and should, therefore, be included in the total cost of the dependent's support.

Multiple Support Agreement. An exception to the support test is applicable if no one person contributed more than half the support of an individual, but over half of the support of the individual is contributed by two or more persons each of whom, but for the support test, would be entitled to claim the individual as a dependent. In this event, **one** of the persons who furnished over 10% of the support may claim an exemption for the dependent individual. Each person contributing to the support, except the person claiming the exemption, must file a written statement on Form 2120 that he will not claim the individual as a dependent for that year. The statements should be filed with the return of the person claiming the exemption.

(3) **Member of Household.** It is not necessary for allowance of the exemption that the claimed dependent be related to you if he is a member of your household in the usual sense and lives with you for the entire year. It should be observed that temporary absences from your home by reason of vacations, school, or sickness will not disqualify him as an exemption if the other tests are met.

It is not necessary that a claimed dependent live with you or be a member of your household if such person is related to you in any of the following ways: your father or mother, or an ancestor of either; your stepfather or stepmother; your son or daughter, or a descendant of either; your stepson or stepdaughter; your brother, sister, stepbrother or stepsister; a son or daughter of your brother or sister; or your son-in-law, daughter-in-law, father-in-law, mother-in-law, brother-in-law, or sister-in-law. An exemption for a cousin ordinarily will not be allowed unless the cousin lives with you as a member of your household. But a cousin may be claimed as a dependent if for the taxable year he receives institutional care as the result of physical or mental disability, and if he meets all other tests and was a member of your household before receiving the institutional care.

(4) **Citizenship or residence.** With minor exceptions, the dependent must be a citizen or resident of the United States, Canada, Mexico, the Canal Zone, or of the Republic of Panama.

(5) **Joint Return.** The claimed dependent may not file a joint return with another person, nor may a person be claimed as a dependent if that person is claimed as a dependent on, for example, her husband's return. The dependent may, however, claim the $600 personal exemption on his own return, even though he has been claimed as a dependent.

For Minnesota income tax purposes, you are entitled to a "credit" of $15.00 for each claimed dependent. Dependents need not be related to nor live with you. The Minnesota credit for dependents is based solely upon actual financial dependency, not upon legal dependency, age or earnings of the claimed dependent. Accordingly, Minnesota law does not provide a "multiple support" exception.

Unlike the federal income tax law, the Minnesota dependent credit is allowed in full only if chief support if furnished to the dependent for a full taxable year of twelve months, and if the dependent was in existence for the same period. Thus, for example, if a child of yours was born on July 1, 1961, you may claim the full $600 exemption for the child on your federal income tax return, but may claim only one-half of the Minnesota dependent credit, or $7.50, on your Minnesota return.

STANDARD DEDUCTIONS

You may itemize your deductions, and deduct such items as contributions (with limitations), interest, taxes, medical and dental expenses (again, with limitations), certain nonbusiness losses and expenses, casualty losses and thefts. If the total of these deductions is less than 10% of your adjusted gross income, it ordinarily will be to your advantage to claim the standard deduction in lieu of itemizing deductions and to obtain the benefit of nonbusiness deductions without the necessity of itemizing them on your return and, perhaps, of proving that you are entitled to them.

The amount of the standard deduction is the lesser of 10% of adjusted gross income or, if you are single or married and file a joint return with your wife, $1,000. If you and your wife file separate returns, the standard deduction may not exceed $500 on each return. If you use the standard deduction, your wife must also use the standard deduction, even though you file separate returns. Accordingly, if you itemize your deductions, your wife must do the same.

If the standard deduction is used and you later find that you should have itemized your deductions, you may do so by filing an amended return. Conversely, if you itemized your deductions, you may file an amended return and use the standard deduction. Under federal law, you are allowed three years in which to file an amended return; Minnesota law, on the other hand, allows you two years after the tax was paid or collected, or three and one-half years from the filing of the return, whichever period is the longer. The words "Amended Return" should be plainly written at the top of such returns.

NON-BUSINESS DEDUCTIONS

Contributions

If you itemize your deductions instead of using the standard deduction, you may deduct gifts to tax-exempt religious, charitable, educational, scientific, or literary organizations, and organizations for the prevention of cruelty to children and animals. Also deductible as contributions are gifts for public purposes to a State, a Territory, a possession of the United States, or a political subdivision of any of the foregoing, or to the United States or the District of Columbia. Under certain circumstances, gifts to cemetery companies, veterans organizations and fraternal lodges may also qualify. But gifts to individuals are not deductible.

The deduction for contributions generally may not exceed 20% of your adjusted gross income for federal income tax purposes, and may not exceed 20% of your net taxable income before credit for contributions for Minnesota income tax purposes. However, under federal law the 20% limitation may be increased to 30% if the additional 10% comprises contributions made to tax-exempt hospitals, to medical research organizations connected with such hospitals, to churches or conventions or associations of churches, or to tax-exempt educational institutions maintaining a regular faculty and curriculum and having a regular student body attending resident classes.

Deductible contributions to a qualified organization may be made in either cash or property, but not in services. The cash gift is the most common form of contribution. If a gift is made by check, a charitable contribution is deductible at the time the check is delivered, if it is thereafter honored and paid. Of course, unpaid pledges are not deductible.

And by all means, do not overlook the small contributions. These all add up. The Service ordinarily will accept estimates of very small donations, if the amounts are reasonable. You might enter: "Small donations to Boy Scouts, Easter Seals, etc. - $25."

Benefit Performances. Numerous charitable organizations sell tickets to benefit performances in order to raise funds. It should be borne in mind that you may, subject to the above percentage limitations, deduct only the excess portion of the cost of tickets. In other words, if you paid $15 for a ticket to a benefit performance of "South Pacific" sponsored by the Cancer Society, and if the regular theater price for the ticket is $4, you may deduct $11 as a contribution.

Donations of Property. If you give property, including stocks, securities and other property such as used clothing, furniture and books and so forth, to charity groups, the amount of the deduction is the fair market value of the property at the time of the gift, and you will generally escape recognition of previously unrealized gain on the property. Thus, taxation on unrealized gain may be avoided in most instances through gifts of appreciated property instead of cash, but there is at least a partial exception. Not infrequently, taxpayers donate appreciated property to a qualified organization upon the condition that the latter will sell the donated property, reinvest the proceeds in such items as state, municipal or United States bonds, the proceeds of which are usually tax-exempt at either the state or federal level, or both, and pay the income therefrom to the donor for life. Prior to 1960, the donor of such property was allowed the charitable deduction, escaped tax on the income received from the organization, and did not recognize gain on the sale of the donated property by the organization. In 1960, however, the Internal Revenue Service issued a ruling which determined that under such circumstances, although the donor was still allowed the charitable deduction and escaped tax on the income received from the organization, the sale of donated property by a qualified organization in accordance with an understanding between the organization and the donor was for tax purposes a sale by the donor. Consequently, the donor must recognize gain on the sale of the donated property in the year of sale.

Contributed Services. Although the value of services contributed by physicians to charitable hospitals and medical research organizations is considerable, the value of such services is not deductible. You may, however, claim a contribution deduction for any unreimbursed expenses incurred in rendering such services to organizations, gifts of cash or property to which whould be deductible. Accordingly, a contribution deduction is allowed for out-of-pocket transportation expenses such as taxi fares, airplane and railroad tickets, and reasonable expenditures for meals and lodging necessarily incurred while away from home in the course of performing donated services.

Contributions that exceed the above-mentioned percentage limitations cannot be deducted as business expenses. However, amounts paid to charitable organizations in payment for specific considerations or privileges, while not deductible as contributions, may be deductible as ordinary and necessary business expenses.

Political Contributions. Although political contributions are not deductible under federal law, you are allowed to deduct political contributions not in excess of $100 for Minnesota income tax purposes.

Interest

You may deduct interest paid (or accrued if you are on the accrual method) within the taxable year on credit from your broker, on installment credit, mortgages, improvement loans, life insurance and most other loans, and on delinquent income taxes (although penalties on delinquent taxes are not deductible). If you purchased personal property under a contract providing that payment of part or all of the purchase price is to be made in installments, and in which carrying charges are separately stated, but the interest charge cannot be ascertained, then the payments made during the taxable year under the contracts are treated as though they include interest equal to 6% of the average unpaid balance under the contract during the taxable year. The "average unpaid balance" is the sum of the unpaid balance outstanding on the first day of each month beginning during the taxable year, divided by 12. In no event, however, may the interest deduction for the year exceed the carrying charges properly attributable to such year. As the rule is not overly generous, you would do well to attempt to ascertain the actual interest paid.

Taxes

Income taxes. Minnesota income taxes paid and withheld in 1961 are allowed as a deduction for federal income tax purposes, but are not deductible on the Minnesota return. Federal income taxes paid in 1961 on 1960 income tax liability or on the 1961 declaration of estimated tax, or withheld during 1961, are deductible on the Minnesota return in computing Minnesota adjusted gross income. It, however, should be noted that the fourth quarter federal estimated tax payment, due on or before January 15, 1962, may be taken into account on the federal income tax return whether or not paid during 1961, but may be deducted on the Minnnesota return only if paid during 1961.

Occasionally, taxpayers receive income which is included in their federal adjusted gross income, but is not taxable under Minnesota law. In such a case, it is inappropriate to claim a deduction, in arriving at Minnesota adjusted gross income, for the entire amount of federal income taxes paid and withheld during the year. Rather, only a portion of such federal income taxes is properly deductible. The Minnesota taxing officials appear to have approved the use of the following formula in computing the deductible portion of federal income taxes under such circumstances:

(1) Income not taxable by Minnesota but taxable under federal law $
(2) Federal adjusted gross income ———
(3) Ration of (1) to (2)
(4) Federal income tax liability for the year (exclusive of self-employment tax)
(5) Federal income taxes paid and withheld for the year (exclusive of self employment tax) $
Less: Fourth quarter federal estimated tax payment made after December 31, 1961
——— $
(6) Portion nondeductible (3) x (4)
(7) Portion deductible (5) - (6) ———
$———

Other Taxes. Minnesota real estate and gasoline taxes as well as the cost of automobile licenses are deductible on both the federal and the Minnesota returns, but federal club dues taxes, admissions taxes, telephone and telegraph taxes, and the employer's one-half of social security taxes with respect to the wages of domestic employees are allowed as a deduction only on the Minnesota income tax return. However, as was pointed out in the first installment of this article, as a deduction on the federal return if incurred and paid by you in connection with your professional practice.

Effective April 11, 1961, the Minnesota Legislature imposed a cigarette and tobacco products excise tax directly upon the consumer. The tax imposed on cigarettes, for example, is 7¢ per package and is deductible only for federal income tax purposes. In computing your deduction for the cigarette tax, multiply the number of packages of cigarettes which you purchased per day times 7¢ and multiply the product by 265 (the number of days in 1961 for which this tax will have been imposed directly on the consumer). Thus, if you purchased two packages of cigarettes per day on and after April 11, 1961, your deduction for federal income tax purposes for the Minnesota excise tax on cigarettes would be $37.10 (7¢ x 2 x 265).

If you sold your home in 1961, you are, under federal law only, generally allowed a deduction for 1961 real estate taxes properly attributable to the part of the year ending the day before the sale, whether or not such taxes were paid. In addition, and again only under federal law, the taxes thus allowed as a deduction must be added to the selling price of the home for purposes of determining gain or loss.

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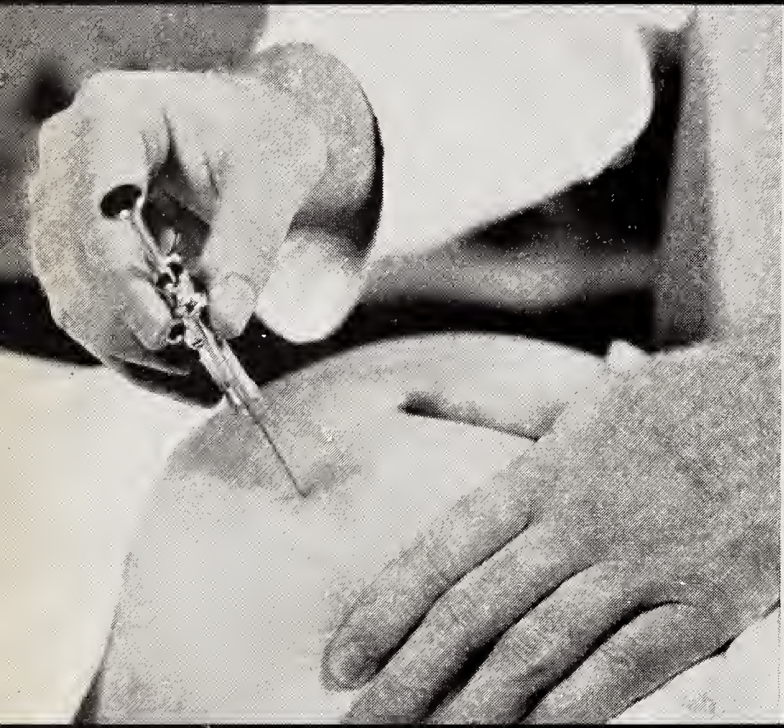

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and the convenience
of this...

IN ORAL PENICILLIN THERAPY

COMPOCILLIN®-VK

POTASSIUM PENICILLIN V

BECAUSE potassium penicillin V (Compocillin-VK) offers excellent absorption[1,2,3,4]—fast, predictable levels of antibacterial activity enter the blood stream and quickly reach the site of infection. *Absorption takes place high in the digestive tract and is virtually unaffected by gastric media.*

Antibacterial levels are so predictable that, in many cases, *Compocillin-VK may be prescribed in place of injectable penicillin.* This is especially appreciated by younger patients and—as you know—oral administration is considered far safer than injectable.

Compocillin-VK is well tolerated and may be used in treating mild, severe, and in high dosage ranges, even critical cases involving penicillin-sensitive organisms. It comes in stable, palatable forms for every patient—every age.

There are tiny, easy-to-swallow Filmtab® tablets—125 mg. and 250 mg. (200,000 units and 400,000 units), a tasty, cherry-flavored suspension (each 5-ml. teaspoonful contains 125 mg.) and two combinations (Filmtab and suspension) with the triple sulfas. Depending on severity of infection, dosage for Compocillin-VK is usually 125 mg. or 250 mg. three times a day. Won't you try Compocillin-VK?

1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193. **2.** J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, A Trial of Penicillin V, *Brit. M. J.*, July 27, 1957, p. 193. **3.** J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957. **4.** W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxymethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.

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Medical Expenses

Generally

If you itemize your deductions instead of using the standard deduction, your deductions for federal and Minnesota income tax purposes may include expenses actually paid during the year for your medical care and that of your wife and dependents, not compensated by insurance or otherwise. Under federal law, therefore, amounts paid on behalf of a claimed dependent, or a person who could be claimed as a dependent except for the fact that he had income of $600 or more, may be included.

Generally, the amounts paid for the diagnosis, cure, mitigation, treatment or prevention of disease or of a physical or mental defect, are medical expenses under federal and Minnesota law. Such expenses include payments made for medicines and drugs and for diagnostic, surgical, hospital, nursing, laboratory, dental, X-ray, obstetrical, and therapy treatments, and other similar services. Also considered medical expenses are the cost and maintenance of artificial teeth, eyes and limbs, eye glasses, surgical and orthopedic appliances and seeing-eye dogs. Medical expenses probably include the amounts paid for permanent structural additions to a house, such as a swimming pool, an air conditioner, an elevator or a first floor bedroom and bath, only if such expenditures (a) are made for the principal purpose of mitigating or treating a disease, **and** (b) do not increase the value of the house. Although medical expenses ordinarily include amounts paid for psychiatric care, the amounts paid for personal analysis of medical students (which in some instances is a required part of their training) do not qualify.

Special Schools for Handicapped Children

The cost of sending a child with some physical or mental disability to a special school having resources for alleviating the child's condition or for training a child with such a disability to live a more normal life is deductible as a medical expense if the alleviation of the disability or the training is the principal purpose for his going there. And this is true even though the child participates in a regular school curriculum at such a school in addition to receiving specialized treatment or training. If, however, the taxpayer is unable to demonstrate that the principal purpose for sending the child to such a school is the special treatment or training available there, he either will be required to allocate only a portion of the cost as a medical expense or will be denied any deduction at all, depending upon the particular facts.

Transportation, Food and Lodging

Under federal law, but not for Minnesota income tax purposes, **the cost of transportation primarily for and essential to the rendition of medical care is deductible as a medical expense.** Thus, for example, the transportation expenses incurred by a taxpayer crippled by arthritis in going to Arizona on the advice of his doctor, or by a parent in accompanying a child to obtain medical care, or taxi fares, are deductible under federal law. To be deducted, however, transportation expenses must be essential to medical care and not merely incidentally related to it.

Amounts paid for food and lodging away from home are probably not deductible as medical expenses under federal law unless they are provided as a necessary part of institutional medical treatment. In a recent case, a federal court of appeals held that rental payments for an apartment in Florida for a taxpayer, his wife and child were incurred as a medical necessity and as a part of the necessary medical treatment of the taxpayer's disease and, as such, were deductible as medical expenses. In sharp conflict is a decision by another federal court of appeals which held that, while transportation expenses incurred by the taxpayer and his wife for a convalescence trip to Bermuda were deductible under federal law as medical expenses, the amounts expended by the taxpayer and his wife for food and lodging were not deductible. The Supreme Court has agreed to review the decision favorable to the taxpayer, and the conflict will probably be resolved.

For Minnesota income tax purposes, although the cost of transportation, as pointed out above, is not deductible as a medical expense, expenses for food and lodging incurred by taxpayers who take trips on the advice of their doctors as a necessary part of medical treatment do qualify as deductible medical expenses. Moreover, if it is necessary for another person (such as a nurse or the spouse of the taxpayer) to accompany the taxpayer on such a trip, the expenses incurred by the taxpayer with respect to food and lodging for such other person are also deductible as medical expenses under Minnesota law.

Hospitalization Insurance

The cost of membership in either the Blue Cross or the Blue Shield plans, as well as commercial hospitalization insurance premiums, may be included in computing medical expenses under federal and Minnesota income tax laws. Commercial medical insurance premiums are deductible as medical expenses for federal income tax purposes, but Minnesota law does not allow a deduction for such expenses unless you have received benefits from the policy during the taxable year, and then not in excess of the benefits received or premiums paid, whichever is less. **The cost of life insurance or disability insurance which insures you against loss of earnings is not a medical expense. Premiums paid for accident and health insurance which does not provide reimbursement to you for medical expenses are not deductible.** Accordingly, if you have, for example, an accident and health policy which combines any of the aforementioned types of insurance, the tax authorities require that you prorate the premium in accordance with the above rules. As indicated above, medical costs recovered during the taxable year through insurance or otherwise reduce the medical deduction. If received in reimbursement of medical cost deducted in prior years, they constitute taxable income.

Limitations on Deduction of Medical Expenses

The deduction for medical expenses on your federal return is allowable only to the extent that such expenses (exclusive of amounts paid for medicines and drugs) exceed 3% of your adjusted gross income. If, however, either you or your wife is 65 or over, the amount deductible under federal law for medical expenses is not subject to the 3% limitation. Moreover, amounts spent by you for medical expenses of your or your wife's dependent parent will not be subject to the 3% rule if such parent is 65 or over. In computing the medical expense deduction on your federal return, the amounts paid for medicines and drugs are deductible as medical expenses only to the extent that they exceed 1% of your adjusted gross income, regardless of the age of you or your wife or your dependents.

The deduction for medical expenses, including medicines and drugs, claimed on your federal return cannot exceed $2,500 multiplied by the number of exemptions you claim, exclusive of special exemptions for age and blindness. The medical deduction may in no event exceed $5,000 if you are single and not a surviving spouse or the head of a household or if you are married, but file a separate return, or $10,000 if you file a joint return or are a surviving spouse or the head of a household. The foregoing dollar limitation, however, does not apply if either you or your wife is 65 or over and and disabled. In such a case, the maximum deduction for medical expenses under federal law is $15,000 if you are 65 and disabled, or if your wife is 65 and disabled and does not file a separate return, or $30,000 if you and your wife are 65 and disabled and file a joint return. **For purposes of this exception, you are considered to be "disabled" if you are unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration.** And "substantial gainful activity" refers to the activity or a comparable activity, in which you customarily engaged prior to the arising of your disability, or prior to retirement if you were retired at the time your disability arose. The Internal Revenue Service considers housekeeping to constitute a substantial gainful activity of a person whose primary activity is housekeeping.

The federal Treasury Regulations list examples of impairments which the Service ordinarily will consider as preventing substantial gainful activity. It, however, should be pointed out that the Regulations declare that none of the illustrations of impairments will, in and of itself, always permit a finding that the person concerned is unable to engage in substantial gainful activity. Examples of such impairments listed in the Regulations are: Loss of use of two limbs; certain progressive diseases which have resulted in the physical loss or atrophy of a limb, such as dia-

Emotional control regained . . . a family restored . . . thanks to a physician and 'Thorazine'

During the past seven years, 'Thorazine' has become the treatment of choice for moderate to severe mental and emotional disturbances, because it is:

- specific enough to relieve underlying fear and apprehension
- profound enough to control hyperactivity and excitement
- flexible enough so that in severe cases dosage may be raised to two or three times the recommended starting level

Experience in over 14,000,000 Americans confirms the reassuring fact that, in most patients, the potential benefits of 'Thorazine' far outweigh its possible undesirable effects.

Of special value in mental and emotional disturbances: Tablets for initial therapy; Injection (Ampuls and Vials) for prompt control; Spansule® sustained release capsules for all-day or all-night therapy with a single oral dose.

Thorazine® brand of chlorpromazine
a fundamental drug in both
office and hospital practice
Smith Kline & French Laboratories

posed by professional models

'THORAZINE' PRESCRIBING INFORMATION

Because of its pronounced calming effect, 'Thorazine' is an outstanding agent for patients with mental and emotional disturbances, particularly those with symptoms of agitation and hyperactivity. In severe cases, initial use of intramuscular administration may be desirable to control symptoms promptly.

Before prescribing 'Thorazine' for other indications than those given below, the physician should be familiar with the dosage, side effects, cautions and contraindications for such uses. This information is available in the *Thorazine® Reference Manual* and *Physicians' Desk Reference,* and from your SK&F representative or your pharmacist.

ADMINISTRATION AND DOSAGE

Dosage should always be adjusted to the response of the individual and according to the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become troublesome. In emaciated or senile patients, dosage increases should be made more gradually than in other patients.

ADULT DOSAGE

Mental and Emotional Disturbances (e.g., agitation, excitement, or anxiety)—*Starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semiweekly intervals, until maximum clinical response is achieved. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but some patients may require substantially higher dosages. Discharged mental patients, for example, may require daily dosages as high as 800 mg. *Starting intramuscular dose* is 25 mg. (1 cc.). If necessary, and if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d.

Alcoholism—Severely agitated patients: *Starting intramuscular dose* is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. **Agitated but manageable patients:** *Starting oral dose* is 50 mg., followed by 25 mg. to 50 mg. t.i.d. For ambulatory patients with withdrawal symptoms or sober chronic alcoholics, *starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before 'Thorazine' is administered.

CHILDREN'S DOSAGE

For Behavior Disorders—*Oral dosage* is on the basis of ¼ mg./lb. of body weight q4-6h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q4-6h). *Rectal dosage* is on the basis of ½ mg./lb. of body weight q6-8h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q6-8h). *Intramuscular dosage* is on the basis of ¼ mg./lb. of body weight q6-8h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day; in children 5-12 years (or 50-100 lbs.)—not over 75 mg./day except in extreme unmanageable cases. In severe cases, higher dosages than those recommended above may be necessary. In such cases, 50-100 mg. daily has been used and, in older children, as much as 200 mg. daily or more may be required.

IMPORTANT NOTES ON INJECTION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least ½ hour afterward because of possible hypotensive effects. The injection should be given *slowly, deep* into the upper outer quadrant of the buttock. If irritation and pain at the site of injection are problems, dilution of 'Thorazine' Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted 'Thorazine' Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery.

'Thorazine' Injection should not be mixed with other agents in the syringe. Because contact dermatitis has been reported with 'Thorazine', nurses or others giving frequent injections should avoid getting the solution on hands or clothing. 'Thorazine' Injection should be protected from light, since exposure may cause discoloration. Slight yellowish discoloration will not alter potency or efficacy. If markedly discolored, the solution should be discarded.

SIDE EFFECTS

The drowsiness caused by 'Thorazine' is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextro amphetamine.

Other side effects reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis.

Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses.

Some patients have an increased appetite and gain weight, but usually reach a plateau beyond which they do not gain.

CAUTIONS

Jaundice: The over-all incidence of jaundice due to 'Thorazine' has been low—regardless of indication, dosage, or mode of administration. It appears to be related to duration of therapy. Few cases have occurred in less than one week or after six weeks. The jaundice that has occurred mimics the obstructive type, is without parenchymal damage, and is usually promptly reversible upon the withdrawal of 'Thorazine'. Although the mechanism is not clearly understood, most investigators conclude that it is a sensitivity reaction in susceptible individuals.

There is no conclusive evidence to indicate that pre-existing liver disease makes the patient more susceptible to jaundice. (Patients with known alcoholic cirrhosis have been treated with 'Thorazine' without further alteration of liver function.) Nevertheless, 'Thorazine' should be used with due consideration in a patient with liver disease.

If a patient on 'Thorazine' suddenly develops fever with grippe-like symptoms, his serum should be tested for increased bilirubin or his urine for the presence of bile. If any of these tests are positive, 'Thorazine' should be discontinued.

Because detailed liver function tests of 'Thorazine'-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

Agranulocytosis: Agranulocytosis, although rare, has been reported. Patients should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted.

Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells, sometimes observed in patients on 'Thorazine' therapy, is not an indication for discontinuing 'Thorazine' unless accompanied by other symptoms.

Potentiation: 'Thorazine' prolongs and intensifies the action of many central nervous system depressants such as anesthetics, barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating 'Thorazine' therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately ¼ to ½ the usual dosage of such agents is required when they are given in combination with 'Thorazine'. (However, 'Thorazine' does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if 'Thorazine' is started. Rather, 'Thorazine' should be started at a very low dosage and increased, if necessary.)

Hypotensive Effect: Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within ½ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition.

In consideration of possible hypotensive effects, the patient should be kept under observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If a vasoconstrictor is required, 'Levophed' and 'Neo-Synephrine'* are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

Antiemetic Effect: The antiemetic effect of 'Thorazine' may mask signs of overdosage of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

Dermatological Reactions: Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some appear to be due to photosensitivity, and patients on 'Thorazine' should avoid undue exposure to the summer sun.

Neuromuscular (Extrapyramidal) Reactions: With very high doses of 'Thorazine', as frequently used in psychiatric cases over long periods, a few patients have exhibited neuromuscular (extrapyramidal) reactions which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug temporarily withdrawn. These reactions can also be controlled by the concomitant administration of an anti-parkinsonism agent (see *Physicians' Desk Reference*). Depending on the severity of the symptoms, suitable supportive measures such as maintaining a clear airway and adequate hydration should be employed. When 'Thorazine' is reinstituted, it should be at a lower dosage.

Lactation: Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of 'Thorazine'. This is a transitory condition which disappears on reduction of dosage or withdrawal of the drug.

CONTRAINDICATIONS

'Thorazine' is contraindicated in comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.) and also in patients under the influence of large amounts of barbiturates or narcotics.

SUPPLIED

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg. of chlorpromazine hydrochloride.)

Spansule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each 'Spansule' capsule contains 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg. of chlorpromazine hydrochloride.)

Ampuls, 1 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 6 mg. of sodium chloride.)

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 1 mg. of sodium chloride; 2% benzyl alcohol as preservative.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains 10 mg. of chlorpromazine hydrochloride.)

Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains 25 mg. or 100 mg. of chlorpromazine; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles, in cartons of 12 and 36, and in gallon bottles. (Each cc. contains 30 mg. of chlorpromazine hydrochloride.)

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* 'Levophed' and 'Neo-Synephrine' are the trademarks (Reg. U.S. Pat. Off.) of Winthrop Laboratories for its brands of levarterenol and phenylephrine respectively.

betes, multiple sclerosis or Buerger's disease; diseases of the heart, lungs or blood vessels which have resulted in major loss in heart or lung reserves as evidenced by X-ray, electrocardiogram, or other objective findings, so that despite medical treatment breathlessness, pain or fatigue is produced on slight exertion, such as walking several blocks, using public transportation or doing small chores; cancer which is inoperable and progressive; damage to the brain or brain abnormality which has resulted in severe loss of judgment, intellect, orientation or memory; mental diseases (*e.g.,* psychosis or severe psychoneurosis) requiring continued institutionalization or constant supervision of the person concerned; permanent and total loss of speech; total deafness uncorrectable by a hearing aid; and severe loss or diminution of vision. **Proof of disability should always be submitted on the return where such disability is claimed.**

For Minnesota income tax purposes, on the other hand, there are neither percentage nor dollar limitations. **Amounts paid for medical and dental care and drugs for yourself and your dependents are deductible in full.**

Nonbusiness Bad Debts

Nonbusiness bad debts are those which are not (1) created or acquired in connection with a trade or business of the taxpayer. (2) incurred in the taxpayer's business, or (3) evidenced by a stock, bond or other security which is a capital asset. If a nonbusiness bad debt becomes **entirely** worthless within the taxable year, the loss is treated as a short-term capital loss. As such, it is deductible first from short-term capital gains, if any; then from net long-term capital gains, if any; then from ordinary income in the maximum amount of $1,000. No deduction is allowed for nonbusiness bad debts which become **partially** worthless during the taxable year.

Other Deductions

You may deduct legal or accounting fees attributable to tax advice and to the preparation of income tax returns. In addition, a deduction is allowed for casualty losses, thefts, and similar losses which are uncompensated by insurance or otherwise. Such expenditures as safety deposit box rental, investors' statistical services, investment periodicals (such as the Wall Street Journal), custodian fees, fees paid to investment advisers, and legal or accounting fees for investment recordkeeping are allowable deductions as expenses paid or incurred for the production or collection of income, or for the management, conservation or maintenance of property held for the production of income.

If a dependent of yours attended an elementary or secondary school during the taxable year, you may, for Minnesota income tax purposes only, deduct amounts paid to others for such dependent's tuition and school transportation costs up to a maximum of $200 for each dependent. You must submit a schedule showing the expenses for each dependent and to whom payments were made.

75 % Credit Against 1961 Minnesota Income Taxes

As you are undoubtedly aware, most Minnesota taxpayers will be allowed a reduction of 75% of their 1961 Minnesota income tax liability under the new "forgiveness" provisions signed into law during the first and second Special Sessions of the 1961 Minnesota Legislature. The new law declares that the reduction will be available only to taxpayers who have filed timely income tax returns required to be filed for taxable years beginning January 1, 1955, and who either have timely paid all taxes and interest shown to be due on such returns for all such taxable years, or, on or before April 16, 1962, have admitted owing and have made arrangements to pay such taxes.

Assuming that you will be entitled to the 75% reduction and to the extent that you can control the receipt of your income or the payment of your deductions, it probably will be to your advantage to increase your taxable income in 1961, inasmuch as the effective rate applicable to 1961 will be substantially lower than the rate applicable to 1962 and subsequent years. However, any adjustment to your Minnesota income for 1961, which also increases your federal income for 1961, may have the effect of placing the additional federal net income in such a high bracket as to equal or exceed the saving being sought in your Minnesota income tax liability. If, however, you are contemplating the realization of capital gains in 1961 or 1962, you may shift the capital gains to 1961 and thereby pay a smaller Minnesota income tax on these capital gains without increasing your federal income tax liability, if, in any event, the maximum tax of 25% if applicable to the capital gains for federal income tax purposes. Of course, there may be business considerations for not anticipating the realization of capital gains in 1961, and the payment of the federal tax thereon in 1962, rather than in 1963, deprives you of the use of the federal tax money for one year.

PARTNERSHIPS

Partnership Income

Partners are liable for federal and Minnesota income taxes as invididuals, and each should report his share of partnership income or loss together with other items of income or loss in determining his taxable income. The partnership itself is a non-taxable entity, although it is required to file an information return and to report its income on federal Form 1065 and on Minnesota Form M-3.

The partnership entity has the option in its first taxable year to account for income on a cash basis or on an accrual basis. Medical partnerships, as individual practitioners, customarily use the cash basis since there is no advantage in paying income tax on professional fees until actually received. Moreover, a cash-basis taxpayer may control his taxable income to a limited extent, by paying bills in the current year, or by postponing the payment of such bills until the following year. The partnership entity computes the depreciation deduction on depreciable partnership property in arriving at partnership income. Consequently, individual partners do not separately compute depreciation on their respective shares of partnership property.

Partner's Distributive Share

Partners are liable individually for income taxes on their shares of partnership income in accordance with the partnership agreement, which may provide for different distributive shares of any item of gain, loss, deduction, or credit. However, any such provision in an agreement will be disregarded if the principal purpose is income tax avoidance or evasion. The distribution ratio for taxable income or loss, exclusive of the items required to be treated separately, would then be applied.

Medical partnership agreements frequently provide only for the division of professional fees, after payment of expenses, without reference to other items. Where no provision is made for the division of particular items, each partner's distributive share of such items will be determined in accordance with his distributive share of ordinary income or loss.

Partnership Tax Year

A new partnership may not adopt, nor may an existing partnership change to, a tax year other than that of its principal partners. A "principal partner" for this purpose is one having an interest of 5% or more in the partnership profits or capital. By application to the Commissioner, however, a partnership may adopt or change to a tax year other than that of all of its principal partners if a satisfactory business purpose for the adoption of the change can be shown.

Nonrecognition of Gain or Loss

When a partner contributes property to a partnership — whether being formed or already in operation — neither he nor the partnership recognizes taxable gain or loss. But if a partner sells property to his partnership, he will recognize gain or loss. Thus, each partner and the partnership should choose the procedure which gives the greater tax advantage, by arranging the transfer as either a sale or a contribution to capital—whichever is desired.

To Doctors Interested in Adding To Their Retirement Income

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Basis

The basis of property contributed by a partner to a partnership is its cost to him. The adjusted basis of property is cost plus or minus certain adjustments, such as improvements or additions to the property or costs chargeable to the capital account during the time the property was held, which are added, or items that amount to a recovery of a part of the cost, such as depreciation, which are deducted.

Basis of Partner's Interest

The basis of a partner's interest in a partnership acquired in exchange for a contribution of property or money, is the amount of money contributed plus the "adjusted basis" to the contributing partner of any property contributed.

Basis of Property to Partnership

The basis to the partnership of property contributed by a partner is the "adjusted basis" of such property to the contributing partner, at the time of the contribution. In other words, property contributed to a partnership has the same basis in the hands of the partnership for purposes of determining gain, loss, depreciation, and so forth, as it had in the hands of the contributor.

Partner's Contributions

Absent a contrary provision in the partnership agreement, items of income, gain, loss, deduction, or credit with respect to property contributed by a partner are allocated among the partners in the same manner as similar items arising with respect to property purchased by the partnership. Accordingly, an allocation will be made according to each partner's normal ratio of dividing profits and losses.

However, a provision may be made in the partnership agreement for sharing depreciation or gain or loss on contributed property among the partners so as to take account of the variation between the basis of the property to the partnership and its market value at the time of the contribution. Although such a scheme may result in possible loss (or gain) to the partners who did not contribute the specific property sold, there generally will be a corresponding gain (or loss) to such partners on sale or disposition of their interest in the partnership.

Payment of Salaries to Partners

Salaries paid to a partner are ordinarily viewed as payments made to an outsider, and the partnership is allowed a deduction for such salaries paid. Salaries are taxable to the recipient partners even though the salaries may result in a partnership loss which must be shared by the salaried partners who cannot use the loss to reduce their basis in partnership assets because of lack of capital.

A salary received by a partner contingent on the existence of partnership profits is fully taxable, but the payment is viewed simply as a distribution of profits and is not deductible by the partnership.

Sale of Partner's Interest

A partner who sells his partnership interest at a profit is generally taxed at capital gain rates rather than the higher taxes applicable to ordinary income. The sale is treated in the same general manner as the sale by a stockholder of shares of stock in a corporation. However, he will have ordinary income and not capital gain to the extent that the sale proceeds for his interest are attributable to the partnership's unrealized receivables.

Sale of Partner's Interest Can Increase Basis of Partnership Assets

When a new partner buys the interest of a former partner, the cost (basis) to the partnership of its assets is normally not affected. But the partnership can elect to increase (or decrease) the basis of its assets when the interest is sold, except that this change in basis will apply only to the new partner, and not to the remaining ones. The basis of the partnership's assets may be increased by the excess of what the new partner paid for his interest over his share of the existing basis of the partnership assets, or decreased by the excess of his share of the existing basis of the partnership assets over the amount he paid for his interest.

Payments to Retiring or Deceased Partner

When a partner retires or dies and payments are made by the partnership to the partner or his heirs, the amounts so paid may represent several items. They may, in part, represent the withdrawing partner's capital interest in the partnership. They may also include his pro rata interest in unrealized receivables or uncollected fees of the partnership.

Payments in excess of the value of the partner's capital interest in the partnership are ordinary income and not a capital gain to a retiring partner or to a deceased partner's heirs and are deductible from the partnership income of the remaining partners. In computing the value of a partner's capital interest, however, his share of the following items are excluded: (1) unrealized receivables or uncollected fees not reported as income, and (2) goodwill of the partnership, except to the extent that the partnership agreement provides for a payment with respect to goodwill.

Payments for a capital interest provide the remaining partners with no deductions, but make it possible for the recipient to receive the preferential tax treatment afforded to capital gains. On the other hand, payments representing participation in partnership income may be deducted by the remaining partners, but the recipient is taxable on such payments as ordinary income.

A payment with respect to goodwill is not deductible to the partnership. Accordingly, the acquisition of the tax benefits of capital gain to the retiring partner can be weighed against the relinquishment of the deduction to the remaining partners, with an appropriate adjustment made therefore in the amount paid to the retiring partner.

Death of Partner Can Increase Basis of Partnership Assets

The basis of partnership assets is generally not affected by the death of a partner. But the partnership can elect to increase (or decrease) the basis of its assets when a partner dies, except that this basis change applies only to the new partner — the deceased partner's estate or beneficiary. The change of basis has no application to surviving partners.

The basis of the partnership's assets can be increased by the excess of the market value at the date of death of the deceased partner over his estate's share of the basis of the partnership's assets, or decreased by the excess of his estate's share of the basis of the partnership's assets over the market value of the deceased partner's interest at death. Consequently, as the estate or beneficiary of the deceased partner succeeds to his share valued as of the date of death, the election can increase the partnership's basis for its assets free of tax with respect to the estate or beneficiary who steps in as the new partner.

PENSION AND PROFIT-SHARING TRUSTS

Generally

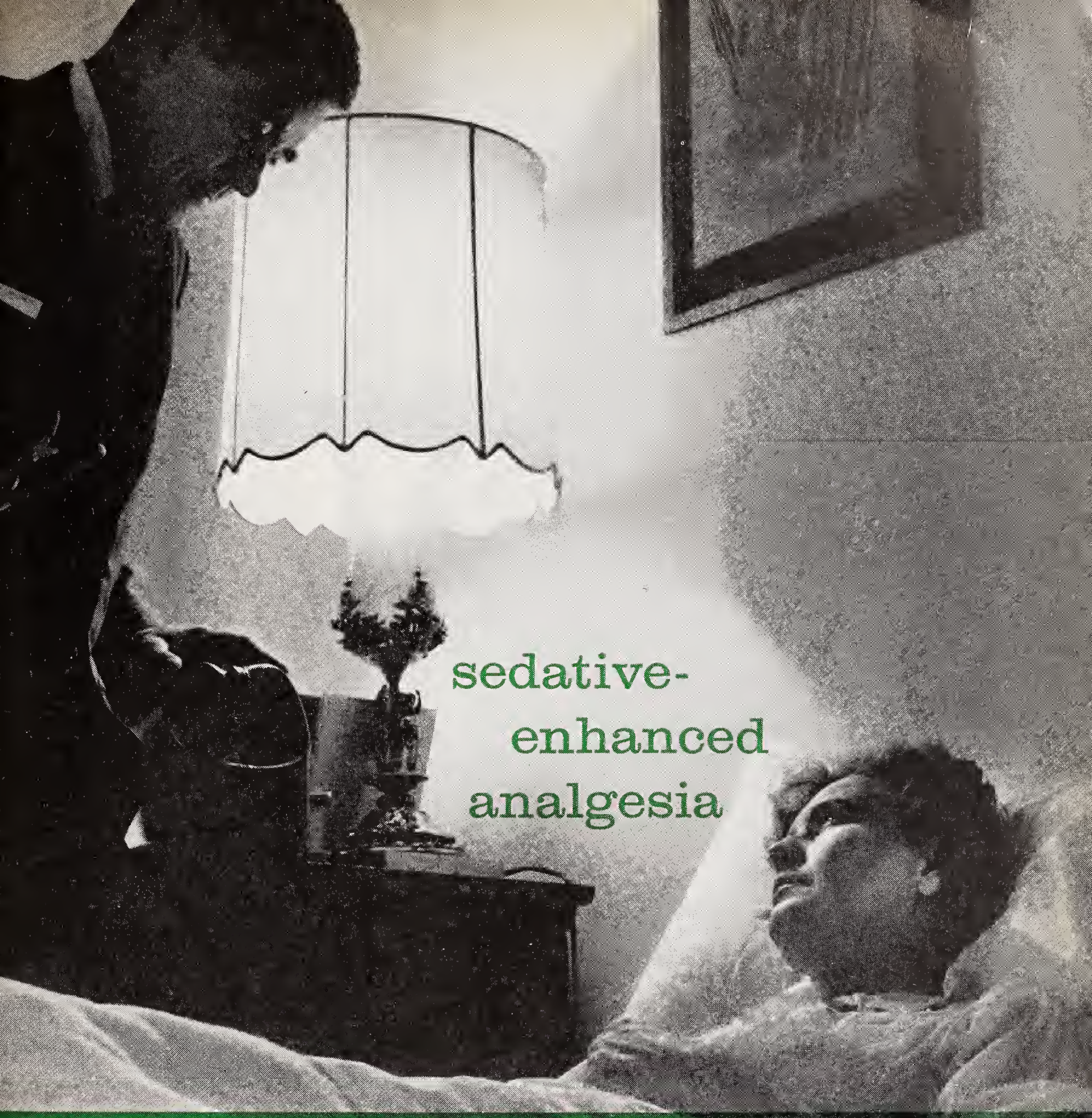
The Internal Revenue Code of 1954 provides for the qualification of pension and profit-sharing retirement trusts established by employers for the exclusive benefit of their employees. Employers' contributions to qualified trusts are immediately deductible as employees' compensation. However, employees' income taxes on contributions made on their behalf to a qualified plan are postponed until the benefits are received. Moreover, the income tax consequences applicable to such employees are surprisingly generous.

Tax Advantages

Pension and profit-sharing retirement plans and trusts have provided a substantial tax advantage to employees, which is unavailable to self-employed persons. For example, even where profits are available to pay key employees salary increases and bonuses, personal income taxes may absorb most of the added compensation. Under a tax-exempt profit-sharing trust, however, the employer's contribution is not includible in his income. As funds accumulate in the trust they may be invested, and the income earned is tax-exempt. The employee is not taxed until his share in the trust is paid out, and it will be taxed at lower long-term capital gain rates. **Contributions to such a trust up to an average of 15% of the payroll may be taken by the employer as an income tax deduction. Thus a substantial portion of the employer's contributions to a profit-sharing trust is salvaged from money that otherwise would be paid out in taxes.**

Physicians who practice independently or as members of a partnership may establish a pension plan or trust or a profit-sharing trust for their employees, including nurses, technicians and secretaries. But as employers, the physicians are ineligible to participate in such arrangements.

Sole proprietors and members of partnerships in nonprofessional occupations can readily change their individual status by incorporating and by becoming employees of the corporation. Even though they may be controlling stockholders or corporate officers they may participate in qualified pension plans and profit-sharing trusts along with other employees. In the few states where persons may legally form a corporation for the practice of medicine this option is also available to physicians. Minnesota is now one of such states, for on May 8, 1961, the Governor signed into law the "Professional Corporation Act," which permits three or more physicians licensed



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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

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to practice in Minnesota to incorporate for the purpose of practicing medicine. **The background and provisions of the act, along with the tax advantages available to those physicians who take advantage of the provisions of the Act are discussed in a comprehensive article, "The Minnesota Professional Corporation Act," published in the November, 1961, issue of Minnesota Medicine.** No attempt will be made in this article to discuss again the tax advantages of incorporation which have been ably pointed up in the November article. One point, however, bears repeating. It is not presently a certainty that a professional corporation organized under the Act will be taxed as a corporation, as the Service has apparently taken the position that a professional corporation must still meet the requirements of the now-familiar Kintner regulations. Nonetheless, it is the author's understanding that any established and substantial group desiring to incorporate under the Minnesota Act should be able to realize the desired tax consequences, as the Act is so worded that Articles of Incorporation, Bylaws and related documents can be drawn to meet the requirements of the Kintner regulations.

Annuities for Employees of Charities

There is a valuable tax break available to physicians who are employees of nonprofit charitable, educational, or religious organizations exempt from tax. If you are an employee of such an organization, you can exclude from gross income — within generous limits — the premiums that your employer pays for a nonforfeitable annuity for you. In general, your annual exclusion for the premium is 20% of your current compensation, multiplied by your years of service, less any excludable premiums or qualified pension contributions paid for you by the organization. Annuity arrangements of this type are becoming increasingly popular with high-income doctors working for charitable hospitals, foundations and medical schools, whether on a full-time or a part-time basis.

If you are an employee of such an organization, you may agree with the organization to take a cut in salary or to forego a schedule salary increase and have the amount of the cut or foregone increase go into a nonforfeitable annuity for you. However, the agreement must cover only **future** earnings, and the organization must pay the premiums directly to the insurance company.

It should be borne in mind that as an employee of a nonprofit organization you can avail yourself of the tax advantages mentioned above only if the annuity premiums come out of the organization's funds and not from amounts already actually or "constructively" received by you. In other words, although income is not actually reduced to your possession, it is considered to be "constructively" received by you in the taxable year during which it is credited to your account or set apart for you so that you may draw upon it at any time. However, income is not constructively received if your control of its receipt is subject to substantial limitations or restrictions. Recent decisions of the Tax Court indicate the considerable lengths to which the court is prepared to go in order to find constructive receipt of annuity payments.

Assuming that you may establish that you have not actually or constructively received income which the charitable organization uses to pay the premiums on a nonforfeitable annuity, it is essential that you establish that you are in fact an employee of the organization, for only employees of such organizations may avail themselves of the tax break discussed above. If the organization does not withhold income and social security taxes from your salary, does not exercise a considerable degree of control over your activities, and does not furnish you with equipment and a place to work, the Internal Revenue Service will undoubtedly take the position that you are an independent contractor rather than an employee. The presence of one or more of the foregoing factors may, however, militate in favor of the opposite conclusion.

ADDENDUM

The first installment of this article contained a discussion, on page 546 of the December, 1961, issue of MINNESOTA MEDICINE, pertaining to the filing of declarations of estimated federal and Minnesota income taxes. There was inadvertently omitted from the same discussion reference to filing declarations of estimated 1962 Minnesota income taxes must be filed if you expect your 1962 Minnesota tax to exceed Minnesota income taxes withheld during 1962 by $20 or more, and if (a) your 1962 Minnesota gross income is expected to include more than $200 from sources other than wages from which Minnesota income taxes will be withheld, and (b) you will be required to file a 1962 Minnesota income tax return.

Write, Wire Today

Aged Bill Testimony Needs Your Follow-up

On August 4, 1961, J. M. Stickney, M.D., represented your Minnesota State Medical Association before the Ways and Means Committee of the House of Representatives. His verbal testimony and the accompanying written statement of the Association outlined your Association's position against medical care for the aged under the social security system. Congress is now back in session and passage of this bill is a primary objective of the Administration. Read these statements and explain the facts to your patients, friends and associates. Urge them to write or wire their and your congressman and senators today!

By Dr. J. M. Stickney of Rochester, Minnesota, representing the Minnesota State Medical Association

VERBAL STATEMENT

I am Dr. J. M. Stickney of Rochester, Minnesota, representing the Minnesota State Medical Association which is composed of 3,650 Minnesota physicians. I am a specialist in internal medicine on the staff of the Mayo Clinic, and I have been a member of the Minnesota State Medical Association since 1936 and have served as an officer from 1954 to the present time. My statement submitted to your committee outlines in some detail many facts about the care of those over 65 in Minnesota who cannot pay for their medical needs, the financial and health status of all those people over 65, and the attitudes and activities of Minnesota physicians in caring for these worthy citizens.

We speak in opposition to the House of Representatives bill No. 4222 and the principles embodied in it, because we are convinced that this legislation is not needed. Studies published by the Minnesota Department of Public Welfare support this conclusion. In these studies 87 per cent of the people over 65 who were

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"nutrition...present as a modifying or complicating factor in nearly every illness or disease state"[1]

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]
8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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interviewed stated that they had no uncared for medical needs. Only 5 per cent believed that finances were a factor in their inability to get adequate medical care.

Sixteen per cent reported income insufficient for their needs, but we know that 13.7 per cent of the people over 65 are on Old Age Assistance rolls and being cared for, medically. Although their financial status may vary, the senior citizens do not report significant medical care needs which are being neglected. For those in need, Minnesota provides one of the most complete programs of medical care in the United States. If there are a few who, because of lack of knowledge of the program or because of financial need, are not now being cared for, they may be included in the present program or by proper implementation of the Kerr-Mills legislation which we support.

We also call your attention to the rapidly expanding field of coverage for the aging by the private insurance industry and the many private resources being brought to bear upon the problems of these older people. We believe that it is in their best interest to encourage private initiative which the proposed legislation would indeed discourage.

We oppose using the Social Security system to include medical care because it is a tax, not an insurance plan, applied to all employees which would provide a costly service benefit covering all regardless of need. Because it is a service benefit there must of necessity be control of vendors' services to an extent which we believe will adversely affect the care of the patient.

The present bill broadly provides that there shall be no interference with the free choice of physician or facilities, but at the same time it states that any hospital to be eligible for payment must agree to accept the fee and conditions set by the secretary of Health, Education and Welfare. Since the secretary, in order to do this, must develop a cost formula, there is a great danger that all the costs will not be sufficiently recognized. We know that many hospitals are not adequately paid for the care of government supported patients. In this event the hospital would be forced to raise fees applied to other services and patients.

Although the present legislation provides primarily for hospital care, important physicians' services are included. Statements by proponents of Social Security financed medical care and much of the legislation proposed leave little doubt that there will be an effort to include all physicians' services for those over 65. Under such circumstances it is also proposed that the physician must accept as full payment the fees and other conditions set by the secretary. This required service benefit ignores the fact that many of those covered are not eligible for complete service benefits by reasonable standards. Such standards are recognized by the Blue Shield Plans which offer service benefits. Thus the patient's free choice of physician or hospital may be denied.

I believe that I represent Minnesota physicians in stating that we have come to the conclusion that the bill now being considered by the committee provides for a measure of control by federal agencies over the methods of payment for services to a large segment of our population which in the long run must also affect the type of medicine which the physician practices.

We are convinced that the King bill is not needed in Minnesota. As physicians, we recognize that some of the aging have problems, including health problems, but we do not believe that government aid under the Social Security system will solve them. We do believe that these people need the best medical care available, including constant research into the medical and health problems of aging, so as to help them retain their activity and independence and self-regard. We believe also, that all of us must encourage the trend toward universal coverage under private health and hospital insurance plans at premiums which all who are self-sustaining can afford to pay. Finally, we believe in a generous, well-administered program of medical care for all who are not self-sustaining, and who need financial help in the settling of their medical and hospital bills. We have such a program now in Minnesota.

WRITTEN STATEMENT

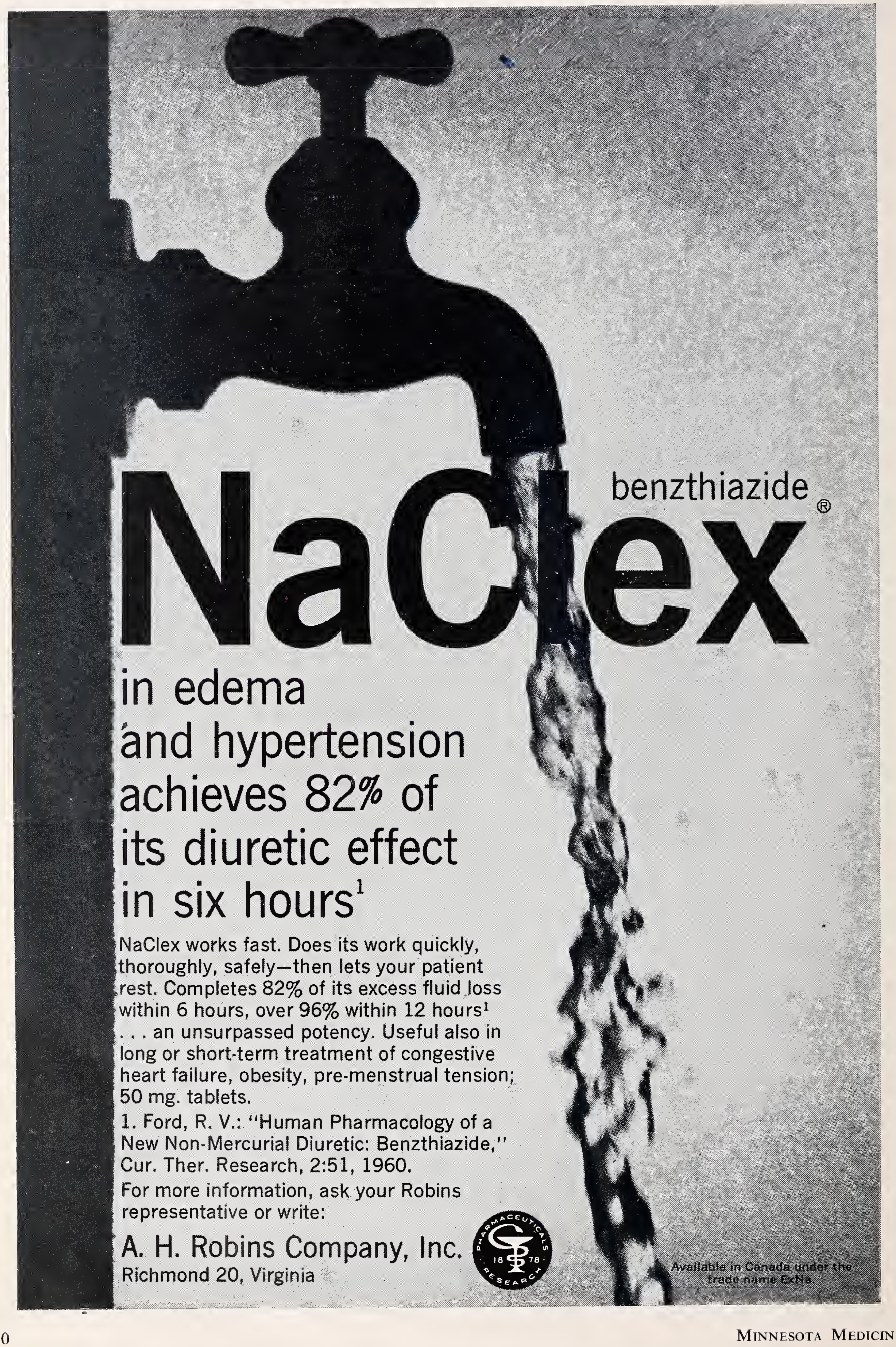
The Minnesota State Medical Association was founded in 1853 in St. Paul, with a membership of 12 physicians. There are now 3650 members, representing the vast majority of physicians in the state, and the purposes of the association, as set forth in its Articles of Incorporation include the promotion of community welfare, community health and the scientific education of its members. Its object is to bring into one compact organization the entire medical profession of the State of Minnesota, to promote the art and science of medicine, to elevate the standards of medical education so that the profession will become more capable and more learned in the science of medicine itself, and to assist state officials and agencies in the administration of medical, hospital, welfare and public-health programs established for the welfare of the people of Minnesota.

In the promotion of these broad ends, the Association has worked closely for many years with the Department of Public Welfare of the State of Minnesota to foster high standards of care for the needy of the state, with the result that Minnesota's program for the needy in all categories ranks at the top among the states. The Association also has worked in the closest cooperation with the Minnesota State Board of Health in the control of communicable disease and the reduction of death rates among mothers and children, with the result that maternal and infant death rates in Minnesota are among the lowest in the entire country, and nationwide records have been established in effective protection against preventable disease.

Statistical Data

Two years ago, on July 17, 1959, the Minnesota State Medical Association prepared a statement on H.R. 4700, and asked that the statement be placed in the minutes of the public hearings on the bill which were conducted by the Committee on Ways and Means of the House of Representatives. The Association declared in that statement that we in Minnesota were opposed to H.R. 4700, (the Forand bill) for many cogent reasons, one of which was as follows: "That exact information was lacking as to the needs of the aging for health services; and that no clear-cut, concise data were available, except as impressions; and that to embark on a program of legislation of the type outlined in H.R. 4700 at that time would be akin to treating a patient without making a diagnosis."

We are proud of the fact that we have been able to collect some solid facts about our aging population



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1. Ford, R. V.: "Human Pharmacology of a New Non-Mercurial Diuretic: Benzthiazide," Cur. Ther. Research, 2:51, 1960.

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in Minnesota since that date. These facts were collected by means of surveys conducted by the Minnesota Department of Pubilc Welfare and other agencies in 1960, principally for guidance in proceedings of the White House Conference on Aging. But they should be considered carefully, we believe, in connection with deliberations on the bills which are now before the Congress as successors to the Forand bill of 1959.

In the course of these surveys, statistical material was secured for an interesting fact book entitled, "Minnesota's Aging Citizens: A County by County Statistical Report," and I should like to give you the following pertinent facts from that book as summarized in "A State Report of Developments and Activities in Aging." Of a population of 3,400,000 persons in Minnesota, 10 per cent are more than 65 years old, the total number being 340,000 and both the actual number in this category and the proportion of this number to the population as a whole are likely to increase as the years go by. About 46,000 (13.7 per cent of those more than 65 years old) are indigent and are entered on Old Age Assistance rolls in the state. This group constitutes approximately 1.3 per cent of the total population. Furthermore, only 7 per cent of the persons more than 65 years old were found to be medically indigent and receiving medical care through the Old Age Assistance program. These 24,000 constitute only 0.7 per cent of the entire population.

It should be emphasized, also, as it was noted in 1959, that Minnesota's Old Age Assistance program provides comprehensive medical services, including:

1. The services of all licensed practioners of the healing arts;
2. Hospital and nursing home care;
3. Drugs and prosthetic appliances, including glasses;
4. Dental care;
5. Special diets; and
6. Transportation, if needed.

The plan provides for free choice of vendor, also. The program is administered in the local community by the local county welfare director, and it costs about $20,160,000 a year. Of this total, the federal government pays about 52.8 per cent; the state about 25.6 per cent and the county about 21.6 per cent. Obviously, the Minnesota plan provides complete medical care for all those who are known to need such attention. In Minnesota, according to figures supplied by the Department of Public Welfare, 34.1 per cent of the people who are more than 65 years old are not receiving Social Security benefits, either because they have never been employed in occupations represented in the Social Security system or because they earn more than the stipulated maximum figure under the law.

For purposes of gathering additional material on the health status of Minnesota's aged, medical grants made to recipients of Old Age Assistance were examined for a sample month. The month's sampling reflected the 1960 experience of the Old Age Assistance program in general. Of the total 1960 case load, 52.2 per cent (or 24,426) received $20,160,000 in medical services during that year. The average monthly cost per medical case was $68.78, and the medical dollar was divided as follows:

1. Acute hospital care	38.5
2. Licensed nursing home care (these two items alone accounting for nearly 70 per cent of the medical dollar)	29.6
3. Drugs and medical supplies	11.9
4. Physicians' and surgeons' services	10.1
5. Hospital care for chronic disease	4.1
6. Nursing care	1.5
7. Dental care	1.1
8. All other	3.2

Dr. Marvin J. Taves, associate professor of sociology and supervisor of rural sociology at the University of Minnesota, directed a survey which was designed to find the attitudes, characteristics and status of persons more than 65 years old in Minnesota. Included in the sampling were 300 Social Security beneficiaries whose eligibility was determined on the basis of income from farming. Samples of persons living in small towns and metropolitan areas also were obtained.

In the report is the comment that "one's financial well-being, after age 65, is often more dependent upon previous accumulations of wealth rather than on personal earnings." One half of the persons interviewed during this survey had a net worth of $10,000 or more. In the whole group interviewed forty-nine per cent reported that they had enough income on which to live comfortably. Thirty-five per cent said they had enough for subsistence only, but no more, while 16 per cent reported that their means were not enough to live on.

When the people interviewed were asked about their health needs and whether or not they had received the medical care they needed, 87 per cent declared they had no uncared-for needs. Only 5 per cent said that they had medical needs which had not been met because medical care was too expensive. Approximately 3 per cent said their ailments were chronic and not susceptible to treatment.

About 85 per cent of those who were interviewed said they had seen a general practitioner for one reason or another during the previous year. The remaining 15 per cent reported they had not seen their physicians during the previous year. Of all those interviewed, 40 per cent had not been hospitalized at all, and 60 per cent had spent varying amounts of time for one reason or another in hospitals during the year.

In respect to total dollars spent for health care, 25 per cent of the people interviewed had spent between $0 and $49 during the year. About 59 per cent had spent less than $200 and only 5 per cent had spent $500 or more. One question which was put to all these people concerned the availability of medical care should it come about that they could not afford to pay for the usual type of medical care. It elicited the following response: 68 per cent said they knew such care was available to them, and 22 per cent said they did not know whether or not it was available. About 10 per cent of them said they had made use of free services within the previous 6 months and 73 per cent said they never, rarely, or seldom made use of such services themselves.

Another question concerned the services of the public health nurses, of whom there is at least one in each county. About 55 per cent of those who were interviewed said they knew that the services of public health nurses were available in their communities. More than 30 per cent did not know whether or not there were such services, and 84 per cent said they never, rarely, or seldom used the public health nurse in their communities. On the other hand, 56 per cent said they would make use of the services of such nurses if they were available or needed, while only 25 percent flatly stated they did not want the services of a public health nurse under any circumstances.

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Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS®—400 mg. *unmarked,* coated tablets; and in *sustained-release* capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

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2 Does not produce Parkinson-like symptoms, liver damage or agranulocytosis

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Filmtab®
OPTILETS
Therapeutic Formula
Multivitamins.
Even if you prescribed a year's supply
the last Optilets® Filmtab® would still be good

Actually, doctor, labeled potency will last a much longer time. While we would never recommend by-the-year dosage of a therapeutic nutritional, this does illustrate the unusual stability of Optilets.

The reason, of course, is Filmtab coating. Unlike previous sugar coatings, no water is needed for application. This virtually eliminates chances of moisture degradation.

Greater stability, however, is just one of Optilets advantages. Without sugar's bulk, we can make tablets up to 30% smaller in size. Coatings are less brittle, and tablets less apt to chip or break. As Filmtab coatings are no more than paper-thin, nutrients are more readily available. Yet, patients are protected from vitamin odors and after-tastes.

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Each Filmtab represents:

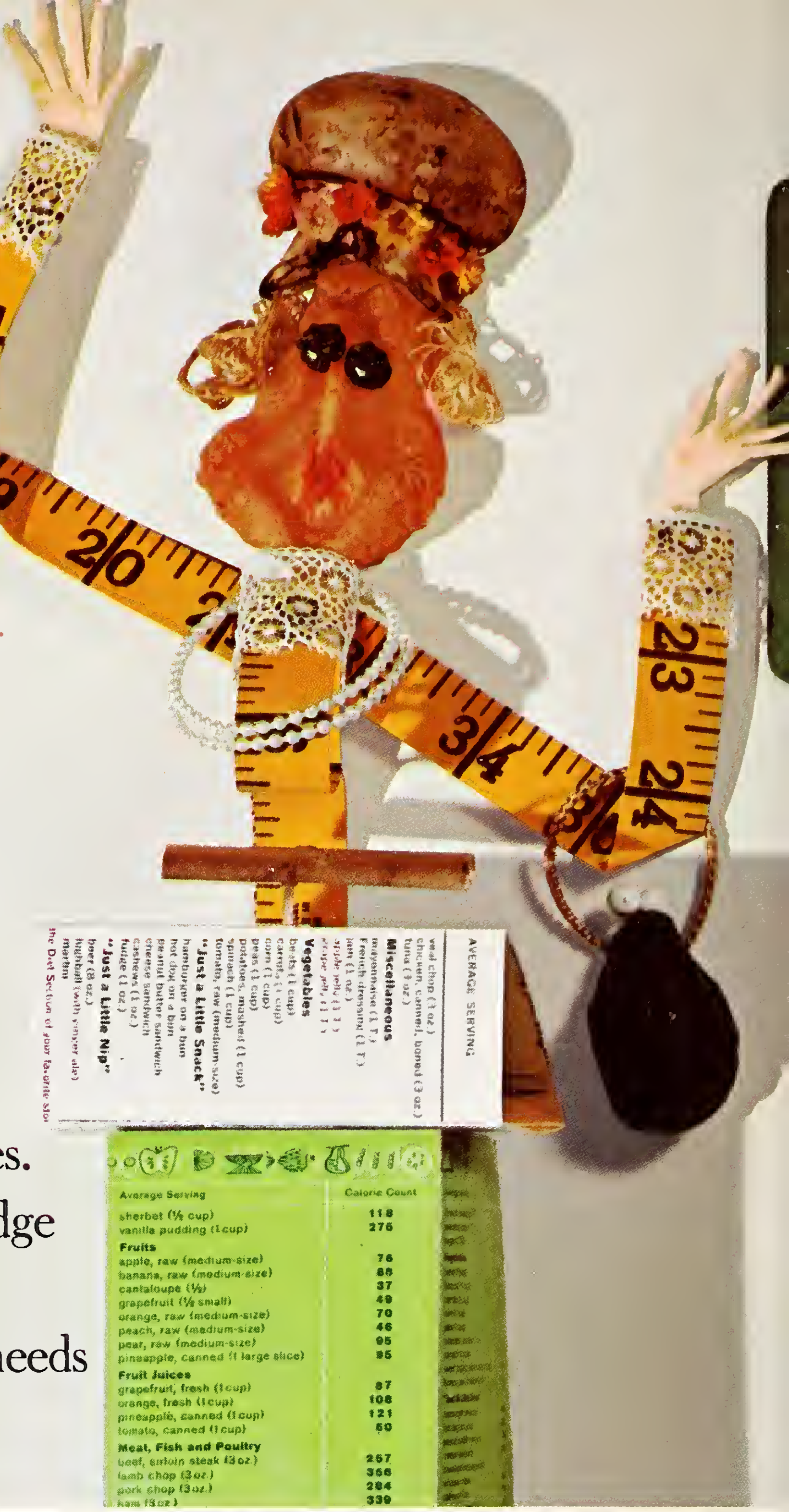
Vitamin A	7.5 mg. (25,000 units)
Vitamin D	25 mcg. (1000 units)
Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Nicotinamide	100 mg.
Pyridoxine Hydrochloride	5 mg.
Cobalamin (Vitamin B_{12})	6 mcg.
Calcium Pantothenate	20 mg.
Ascorbic Acid	200 mg.

Optilets-M®

Each Filmtab represents all the vitamins of Optilets plus the following:

Iron (as sulfate)	10 mg.
Copper (as sulfate)	1 mg.
Iodine (as calcium iodate)	0.15 mg.
Cobalt (as sulfate)	0.1 mg.
Manganese (as sulfate)	1 mg.
Magnesium (as oxide)	5 mg.
Zinc (as sulfate)	1.5 mg.
Molybdenum (as sodium molybdate)	0.2 mg.

FILMTAB—FILM-SEALED TABLETS, ABBOTT 201071


AVERAGE SERVING
veal chop (3 oz.)
chicken, canned, boned (3 oz.)
tuna (3 oz.)
Miscellaneous
mayonnaise (1 T.)
French dressing (1 T.)
jam (1 oz.)
Vegetables
beets (1 cup)
carrots (1 cup)
corn (1 cup)
peas (1 cup)
potatoes, mashed (1 cup)
spinach (1 cup)
tomato, raw (medium-size)
"Just a Little Snack"
hamburger on a bun
hot dog on a bun
peanut butter sandwich
cheese sandwich
cashews (1 oz.)
fudge (1 oz.)
"Just a Little Nip"
beer (8 oz.)
highball (with ginger ale)
martini
the Diet Section of your favorite sto

Average Serving	Calorie Count
sherbet (½ cup)	118
vanilla pudding (1 cup)	275
Fruits	
apple, raw (medium-size)	76
banana, raw (medium-size)	88
cantaloupe (½)	37
grapefruit (½ small)	49
orange, raw (medium-size)	70
peach, raw (medium-size)	46
pear, raw (medium-size)	95
pineapple, canned (1 large slice)	85
Fruit Juices	
grapefruit, fresh (1 cup)	87
orange, fresh (1 cup)	108
pineapple, canned (1 cup)	121
tomato, canned (1 cup)	50
Meat, Fish and Poultry	
beef, sirloin steak (3 oz.)	257
lamb chop (3 oz.)	356
pork chop (3 oz.)	284
ham (3 oz.)	339

Her position on nutrition
Is taught in all the schools.
She's an oracle for others,
Yet, the first to break the rules.
While a mine of diet knowledge
(And, each lecture is a gem)
Poor Ramona from Pomona needs
some DAYALETS with M.

DAYALETS-M®
Abbott

Likes, dislikes, and time schedules never interfere with her lectures, doctor, just her diet. She could live in a grocery store and still eat poorly. While Dayalets-M can't replace self-discipline, it can help insure optimal nutrition. Tablets are tiny, potent, and Filmtab-coated. Patients like taking them.

Filmtab® DAYALETS-M®...*essential vitamins plus 8 minerals in the most compact tablet of its kind*

ABBOTT

112070 Filmtab—Film-sealed tablets, Abbott

On the subject of hospital insurance the response was as follows: about 60 per cent of all the people interviewed carried some type of hospital insurance, and the percentage rose to 71 per cent among people more than 65 years old in the metropolitan areas. The majority had purchased their insurance after the age of 50 years. Medical and surgical insurance was held, in addition, by about 50 per cent of the group. Those who held this type of insurance likewise had purchased it after the age of 50 years. Another question asked of all respondents in this survey concerned how much income they and their spouses needed to live on during a month. Answers to this question varied. About 70 per cent said they needed between $100 and $250 a month.

One other significant study of hospitalized patients in a typical rural Minnesota community was made in 1960. The people concerned in this survey were patients in the Renville County Hospital in Olivia, Minnesota, a general hospital having 41 beds and 10 bassinets. The study was carried out by the hospital administrator with the aid of the medical staff. It covered 256 patients and 350 hospital admissions. All the patients studied were 65 years old or older, and they constituted 21.5 per cent of the total admissions. Of these, 14.8 per cent were admitted for surgical operations and 85.2 per cent were admitted for medical conditions. Their total hospital bills were classified as follows: mode (or most frequent figure) $36.00; median, $226.00; and average, $350.54. Three quarters of the patients used private resources to pay their bills, and 25 per cent of the bills were paid by a government agency. As of February 1, 1961, only 8.9 per cent had not paid their hospital bills in full.

Comment

On the basis of the facts uncovered in Minnesota, the question arises as to the need for the King bill in Minnesota. We believe that these facts warrant the conclusion that the bill is not needed.

In this connection, the attention of the committee is called especially to the following considerations, presented here in the form of pertinent questions:

1. How many persons more than 65 years old need medical care in Minnesota and cannot afford to pay for it?

As set out above, only 7 per cent of all persons more than 65 years old in the state are medically indigent, and this percentage represents only 0.7 of the total population of the state. These people receive complete care under Minnesota's Old Age Assistance program.

Furthermore, 87 per cent of the people interviewed said they had no medical needs which had not been met, and only 5 per cent said they had needs which could not be met because they could not afford to pay the costs involved. At the same time, only 55 per cent indicated any awareness of the fact that a public health nurse might be available to help them meet health-care needs. Obviously, this situation points up the importance of better communication with senior citizens to acquaint them not only with the availability of nursing services, but with other community facilities of special interest to the elderly.

Seventy per cent of the people interviewed said they could live as husband and wife on $100 to $250 a month. Furthermore, more than half of all of them had a net worth of $10,000 or more. More than that, the study showed that 59 per cent of our senior citizens in Minnesota spent between $0 and $200 for medical care during 1960, and that 95 per cent of them spent less than $500 during the year.

Finally, 60 per cent of them carried hospital insurance, the study pointed out, and 50 per cent had additional medical and surgical insurance. Most of the people studied had bought their insurance during the last 15 years, and the clear trend is toward more and more health insurance coverage for the aging.

2. Is the King bill the answer for those who do need help in Minnesota?

The answer to that question is a definite "no." It is a fact that 5 per cent of the people interviewed said they could not care for medical needs for financial reasons. But the obvious truth of the matter is that these people do not know about the services already available to them. If it is granted, however, that there were people whose needs could not be met by the facilities now at the disposal of the needy, the fact remains that the King bill would do them very little good.

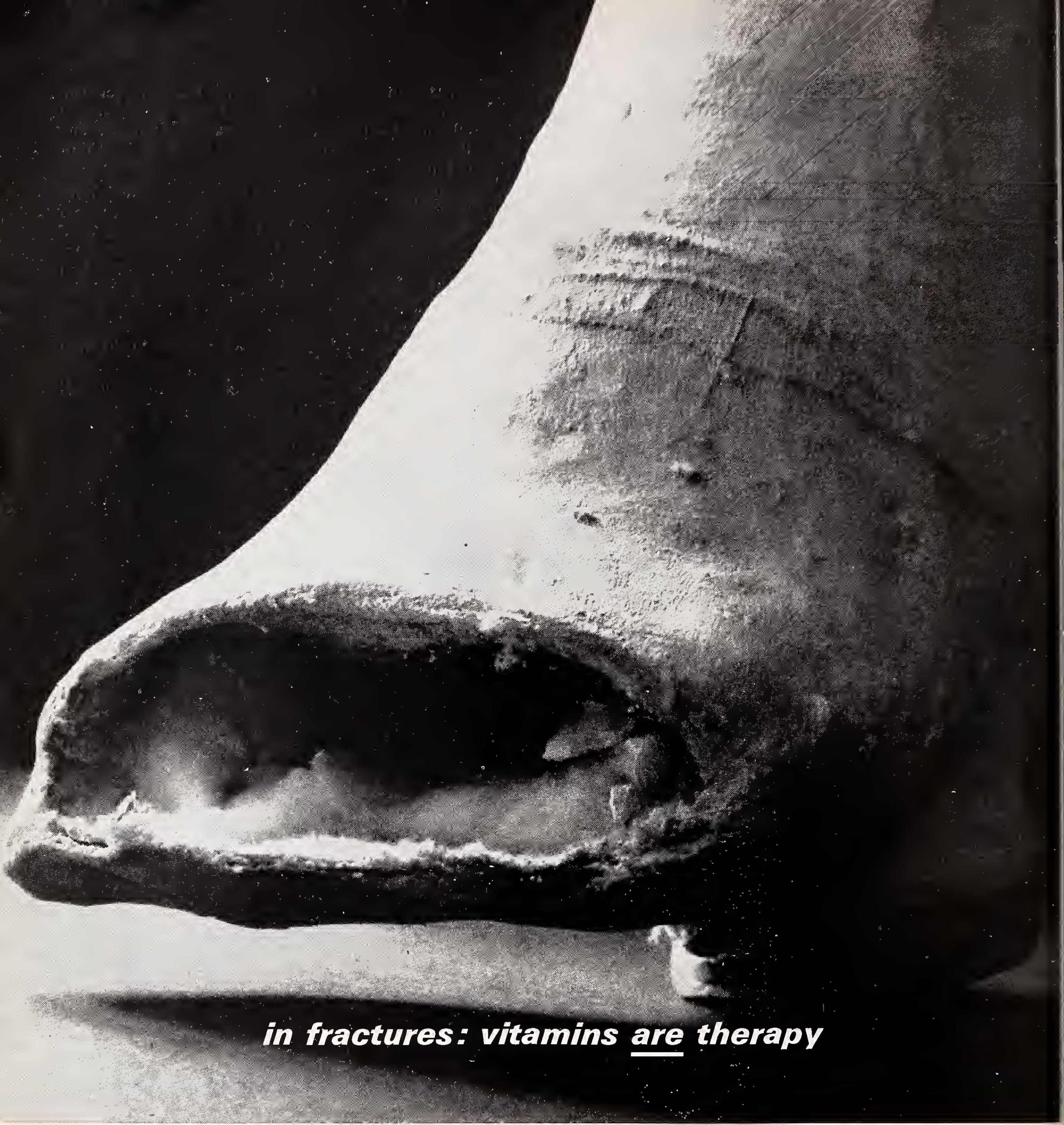
The King bill would not provide the best solution to the problems of these people because many of them would not be covered, and the King bill itself does not provide complete coverage for those who have a real need for expensive health care. There are limits to the benefits which the King bill would provide. Under the Minnesota plan there is complete care for those who need it. If it becomes obvious that others not now eligible need help, they can be included in broader coverage under the principles of the Kerr-Mills legislation.

3. Will private insurance companies be able to provide the coverage needed by aging citizens in Minnesota?

The answer to that question appears to be that they will be so able. We have already pointed out that more than 50 per cent of Minnesota's population older than 65 years has insurance coverage, and that the types of policies available increase each year. Minnesota Medical Service, Inc. (Blue Shield) offers a policy for everybody more than 65 years old at the very nominal cost of $2.40 a month, and all participating physicians in the state have agreed to accept the reduced fees provided for under this contract. Blue Shield also is making available a new hospital plan at a modest cost. This contract has just been devised with the needs of the aging primarily in mind. Moreover, private insurance companies have sold plans to many people more than 65 years old in Minnesota.

4. What would the King bill do?

The answer to the question of what this bill would do involves a consideration of what the Social Security program really is. It is a method of collecting taxes from the worker and the employer or the self-employed which are to be returned to the worker or the self-employed at a certain age in the form of cash money. This money is to be used by the taxpayer as he sees fit. It has been established as a leading principle of Social Security that the recipient shall spend his money as he may choose. The King bill would establish a new principle. It would set up a dangerous precedent of government control, and it would purchase hospital and some physicians' services for the employee or the self-employed and, in



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Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
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Vitamin B_{12} Crystalline	4 mcgm.
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Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

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addition, tax him for it. It would take away the right of choice from the recipient and force his doctor to send him to the hospitals which meet government requirements, and which agree to accept a government schedule of fees. These hospitals might not, in fact, be the ones the patient and his doctor would choose; and the same holds true for the services of nursing homes. In every case the recipient would have surrendered his right of choice.

Physicians of Minnesota are opposed to the King bill, even though the proposed benefits would be devoted mainly to hospitalization, because it seems clear that the action proposed in the bill is only a prelude to the inclusion of physicians' services which might be subjected to the same degree of governmental supervision.

What Physicians Are Doing in Minnesota

Here is our program, in more detail, for the aging in Minnesota. We have already dedicated ourselves to the following program.

1. The state-wide Advisory Committee of the Minnesota State Medical Association will continue to work in close cooperation with the welfare officials of the State of Minnesota to enhance and strengthen our already unlimited program of medical care for recipients of Old Age Assistance and for the medically indigent in Minnesota.
2. Our representatives, the physician-members of the Governor's Citizens' Council on Aging, will continue to serve and advise the Council on the medical problems of the aging. We will continue to participate in state and regional meetings on these problems and do our full share of the work indicated in this area for the state. Immediate plans call for active assistance in organizing local community councils to define local needs and to stimulate action to take care of such needs.
3. We will continue to work with Minnesota legislators to assure adequate support for the Old Age Assistance program and to promote inplementation in Minnesota of the Kerr-Mills Act, which our Association fully supports. In this general area we have already accomplished much in the improvement of standards for nursing homes, in the building and staffing of rehabilitation facilities and in the institution of the system of regional mental-health clinics which has now become an effective reality in the state. We have also encouraged the removal of senile patients from state mental institutions and the placing of them in nursing homes with advantages to all concerned, and particularly to the patient who several years ago would have been lost in an asylum.
4. We will continue our program for the improvement of hospital facilities in the state, and in this area we are particularly proud of our record. We have already reached 93 per cent of the ideal number for first-rate general hospital beds in Minnesota, as established by standards based upon the Hill-Burton Act as it affects our state.
5. Our Association is actively recruiting young men and women to enter the field of medicine and the related professions. We are aware of the problems posed by our expanding population, and, particularly, by the rapidly increasing numbers of people more than 65 years old. We know that we need physicians, more physicians and better physicians, and that standards of medicine must be kept high so as to attract the finest types of candidates to the profession. We are already offering scholarships and loans to medical students, and we shall continue to do what we can to attract young people to the field.
6. We have recently approved the new hospital plan for senior citizens offered under the auspices of Blue Shield, Inc., which was mentioned earlier. This pioneering new plan is part of our effort to make it possible for every person who has resources of his own to take care of his medical and hospital fees. Another part of this work is our joint effort, with management, labor and hospitals, to control the costs of medical-care plans and to adjust such plans to the needs of the aging.
7. Committees of the Minnesota State Medical Association devoted to all aspects of aging, including heart diesase, cancer, diabetes and rheumatic diseases, of course will continue their work and to make reports to the physicians and to the public on new developments in the care of the aging. This is a traditional and highly important part of our program for all the people of the state.

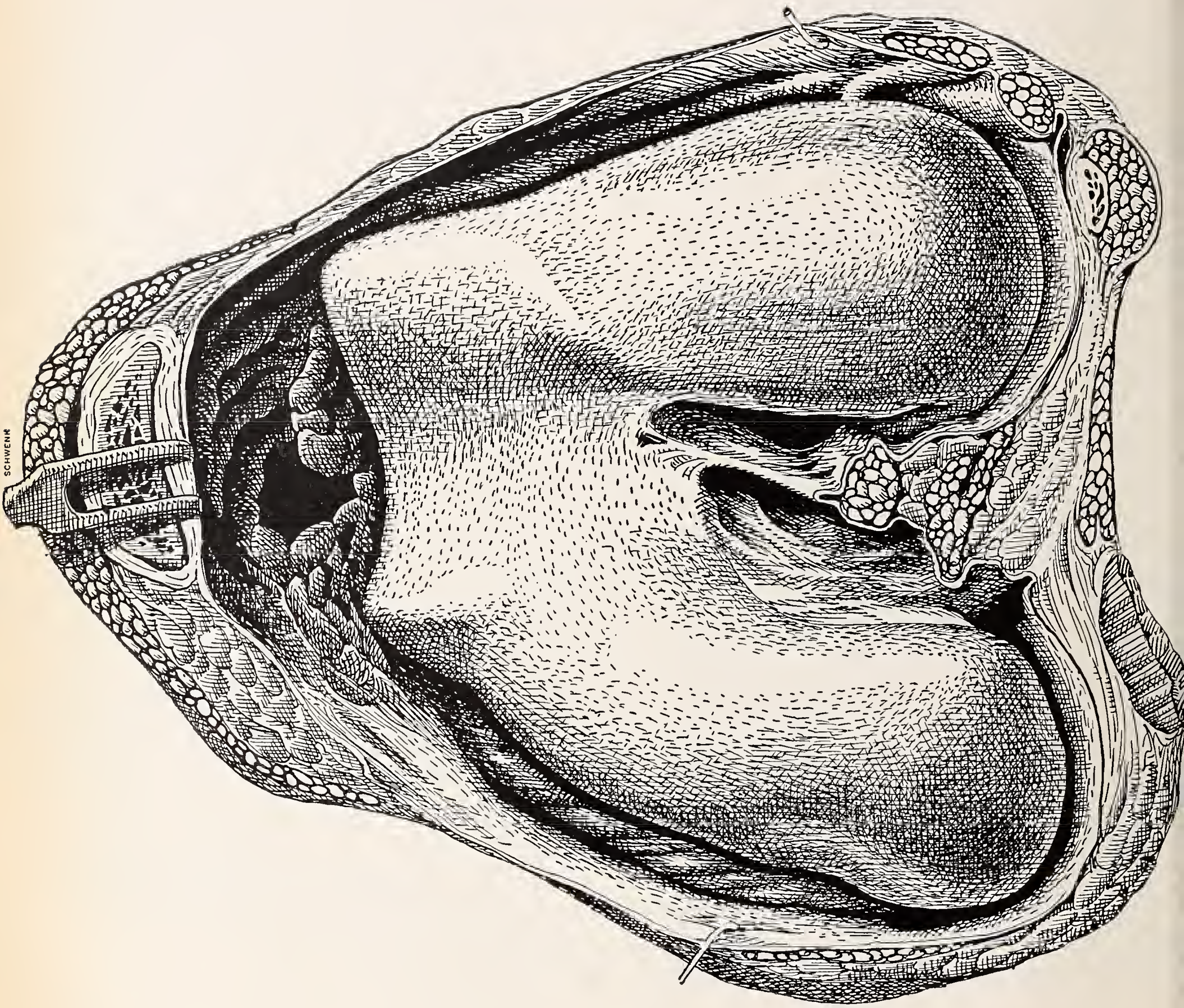
Summary

In conclusion, we wish to re-emphasize the fact that the physicians of Minnesota are dedicated to the provision of the very best medical care possible for everyone, including the aging, in Minnesota. For those who cannot provide this care for themselves, we want the same kind of complete care that is available for others, and we want it to be available for every person who can be shown to be in need. As for those who can pay for the cost of medical care, we take the reasonable and equitable position that they should be encouraged to assume the same responsibilities in this field as they do in others. We want to provide insurance protection at prices which people of small incomes can pay, and we want such people to be able to select their own physicians and their own hospitals without interference from government agencies.

We are confident that the health problems of the aging can be solved and managed entirely satisfactorily in this way; conversely, we are convinced that use of the Social Security mechanism to attempt to solve them will simply threaten the self-reliance and freedom of the aging.

Our modern plans for rehabilitation of the disabled and the aging call for self-help and self-discipline. They are designed to help men to walk alone and to maintain their independence and self-regard. We believe that the independence and freedom of patients in the management of their problems are important factors, also, in our plans for good medical care for the aging.

We believe, further, that independence and freedom are important for medicine as well as for patients. We think that a resolute and self-reliant citizenry of any age is of prime importance to the financial solvency of our entire Social Security system in the United States. For all these reasons, we must unalterably oppose H. R. 4222—the King bill—which we feel sure would curtail the independence of the aging and destroy the possibility of helping them to help themselves.



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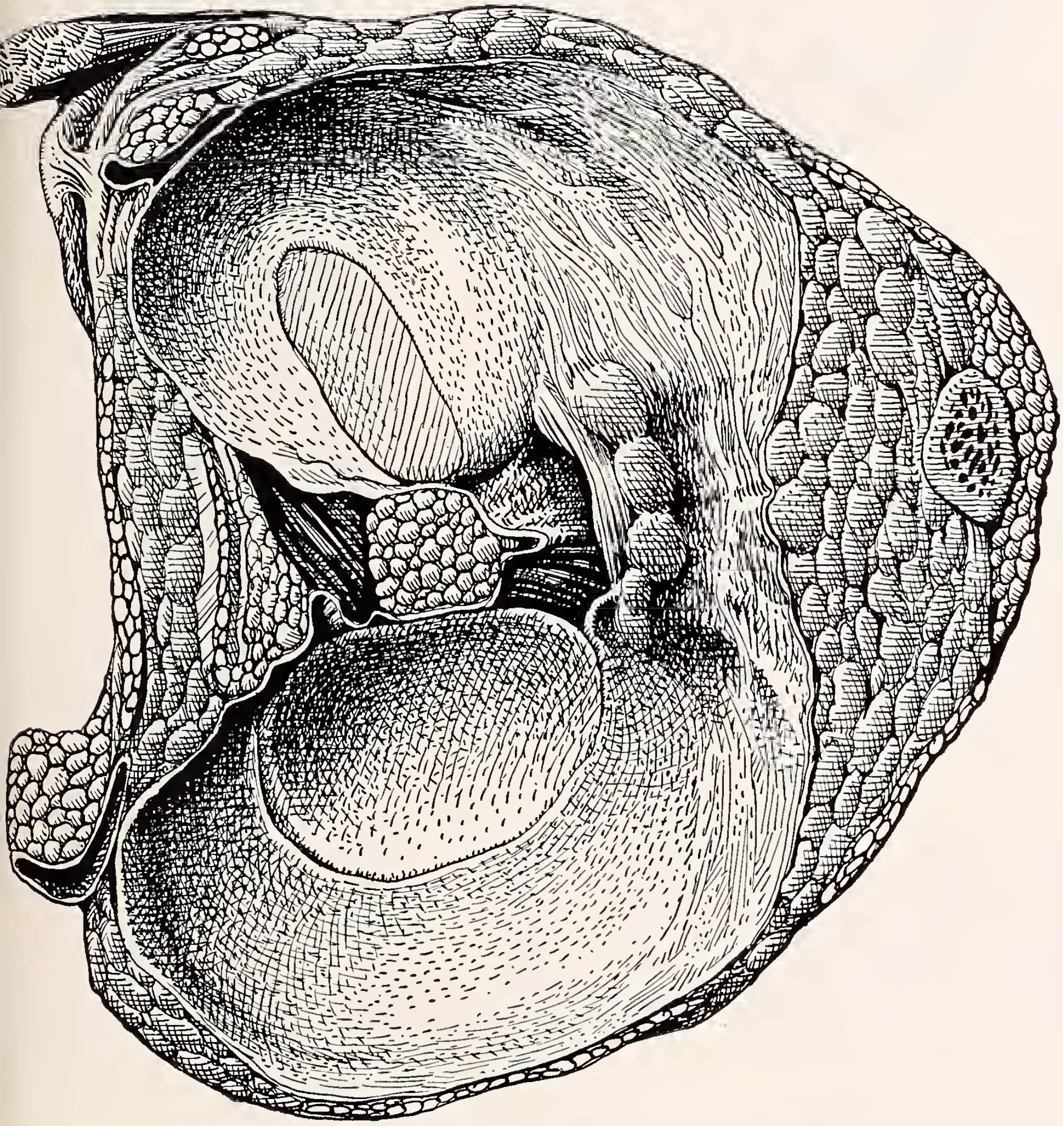

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Sulfaguanidine U.S.P.	2 Gm.
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Report on AMA Clinical Meeting

Social Security health care, relations with the American College of Surgeons, organization of the American Medical Political Action Committee, medical discipline and polio vaccine were among the major subjects acted upon by the House of Delegates at the American Medical Association's Fifteenth Clinical Meeting held November 26-30 in Denver.

American College of Surgeons

The House agreed with the intent of five resolutions which expressed strong dissatisfaction over recent statements by a spokesman for the American College of Surgeons, and it also approved a Board of Trustees report informing the House that arrangements have been made for a January meeting with the ACS Board of Regents to discuss that organization's recent statements and policy positions. The report expressed hope that the meeting "will lead to a unification of effort in behalf of American medicine."

The House instructed the Board of Trustees to take the five resolutions to the January meeting and to report to the delegates as soon as possible on the results of the meeting. In taking the action, the House approved a reference committee report which said:

"Your reference committee believes the public airing of disagreements between large segments of medicine can only confuse and shake the confidence of the public in the medical profession and distort the true image of medicine which the American people should have.

"However, in its hearings upon the several resolutions relating to the recent statements of the American College of Surgeons, all those who testified were in opposition to the actions and statements of the ACS. The majority of those who spoke were Fellows of the American College of Surgeons.

"Your reference committee has no wish to fan the flames of controversy ignited by the statements of the American College of Surgeons. On the other hand, the committee feels the House has an obligation to its membership—which includes physicians in all types of practice—to agree with the indignation manifested by the introduction of these resolutions and in the discussions before the committee.

"This is all the more important because the position of the American College of Surgeons is based on an incorrect interpretation of the action of this House which in no sense is a retreat from its position of firm opposition to fee splitting."

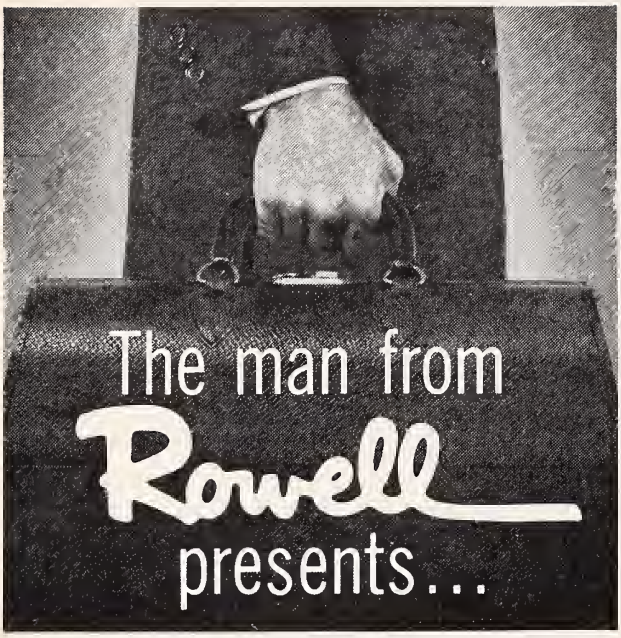
American Medical Political Action Committee

The House heartily approved the purposes and goals of the recently organized American Medical Political Action Committee and urged all physicians, their wives and interested friends to join AMPAC and other political action committees in their states and communities.

"Effective political action must be carried on at the local level and effective implementation must be done by local groups of physicians," the House said. "The formation of AMPAC recognizes the need for a national medical political action committee to coordinate the political activities of physician groups at all levels throughout the country."

The purposes of AMPAC, which is an organization separate and distinct from the American Medical Association as required by federal law, are:

1. To promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs.
2. To encourage physicians and others to understand the nature and actions of their government as to important political issues and as to the records and positions of political parties, officeholders and candidates for elective office.
3. To assist physicians and others in organizing themselves for more effective political action and for carrying out their civic responsibilities.
4. To do any and all things necessary or desirable for the attainment of the purposes stated above.



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Available as: 250 mg. tablets and 125 mg/5cc oral solution.

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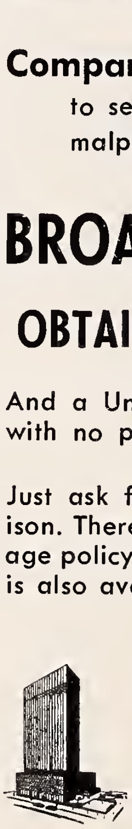

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Continuing to grow in clinical stature

Continuing to grow in clinical stature

Recent medical literature[1-27]—adding to an already massive bibliography—continues to document the effectiveness of well-tolerated Terramycin in pediatric, respiratory, and other infections. **Recent bibliography: 1.** A.M.A. Council on Drugs, New and Nonofficial Drugs 1961, Philadelphia, Lippincott, 1961, pp. 142-147. **2.** Beckman, H.: The Year Book of Drug Therapy, Chicago, Yr. Bk. Pub., 1961, p. 271. **3.** Eastman, N. J., and Hellman, L. M.: Williams Obstetrics, ed. 12, New York, Appleton-Century-Crofts, 1961, pp. 845-1035. **4.** Keefer, C. S., in Modell, W.: Drugs of Choice 1960-1961, St. Louis, Mosby, 1960, pp. 141, 146, 147. **5.** Huang, N. N.: J. Pediat. 59:512, 1961. **6.** Smith, R. C. F.: Brit. J. Clin. Practice 15:345, 1961. **7.** Asay, L. D., and Koch, R.: New England J. Med. 262:1062, 1960. **8.** Berry, D. G., et al.: Lancet 1:137, 1960. **9.** Osol, A., et al.: The Dispensatory of the United States of America, ed. 25, Philadelphia, Lippincott, 1960, pp. 953, 1556. **10.** Adams, A. R. D.: Brit. M. J. 1:1639, 1960. **11.** Jung, R. C., and Carrera, G. M.: Dis. Colon & Rectum 3:313, 1960. **12.** De Lamater, J. N.: Am. J. Gastroenterol. 34:130, 1960. **13.** Stewart, W. H., et al., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. II, chap. 5, p. 19. **14.** Wellman, W. E., and Herrell, W. E., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. I, chap. 44, p. 13. **15.** Wenckert, A., and Robertson, B.: Acta chir. scandinav. 120:79, 1960. **16.** Alstead, S.: Dilling's Clinical Pharmacology, ed. 20, London, Cassell, 1960, p. 462. **17.** Grover, F. W.: Texas J. Med. 57:355, 1961. **18.** Gardiner, W. P., and Gomila, R. R., Jr.: Scientific Exhibit, Venereal Disease Seminar, U.S. Public Health Service, Feb. 28-Mar. 3, 1961. **19.** Jacques, A. A., and Fuchs, V. H.: J. Louisiana M. Soc. 113:200, 1961. **20.** Nathan, L. A.: Scientific Exhibit, 15th Clinical Meet., A.M.A., Denver, Col., Nov. 26-30, 1961. **21.** Ullman, A.: Delaware M. J. 32:97, 1960. **22.** Lamphier, T. A.: Scientific Exhibit, New York State M. Soc. Meet., New York, May 7-13, 1960. **23.** Freier, A.: Paper presented at Michigan Soc. Obst. & Gynec., Detroit, May 3, 1961. **24.** Logan, K. M.: Scientific Exhibit, Ann. Meet., Ohio Acad. Gen. Practice, Cincinnati, Sept. 13-14, 1961. **25.** Altemeier, W. A., and Wulsin, J. H. (A.M.A. Council on Drugs Report): J.A.M.A. 173:527, 1960. **26.** Krol, W. J.: J. Abdom. Surg. 3:78, 1961. **27.** Potempa, J.: Med. Klin. 56:352, 1961.

In Brief

The dependability of Terramycin in daily practice is based on its broad range of antimicrobial effectiveness, excellent toleration, and low order of toxicity. As with other broad-spectrum antibiotics, overgrowth of nonsusceptible organisms may develop. If this occurs, discontinue the medication and institute appropriate specific therapy as indicated by susceptibility testing. Glossitis and allergic reactions to Terramycin are rare. Aluminum hydroxide gel may decrease antibiotic absorption and is contraindicated. For complete dosage, administration, and precaution information, read package insert before using.

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Medical Discipline

The House received from the Council on Constitution and By-Laws a proposed amendment which would have made it possible to implement a recommendation by the Medical Disciplinary Committee that was approved by the House at the June, 1961 meeting.

This recommendation was to change the bylaws so as to confer original jurisdiction on the Association to suspend and/or revoke the AMA membership of a physician found guilty of violating the Principles of Medical Ethics or the ethical policies of the Association, regardless of whether or not action has been taken against him at the local level. However, after considerable discussion on the floor of the House, the proposed amendment was referred back to the Council on Constitution and Bylaws.

In another action on medical discipline the House approved the expanded activities of the Judicial Council, which has taken over permanent responsibility in that area, and said that the Council program should benefit all physicians, the public and the profession.

Polio Vaccine

The House adopted a resolution which urged that medical societies at the local, county, district or state levels throughout the United States should encourage, stimulate and participate in surveys to determine the percentage of individuals in each community who have undergone immunizing procedures for poliomyelitis.

The resolution stated that on the basis of the results of the surveys, the local medical society should determine the type of vaccine and the most effective type of program which will be of greatest benefit to the public.

Until such time as all three types of oral vaccine are available, the resolution concluded, the Salk vaccine should be the vaccine of choice for routine poliomyelitis immunization, with the choice of program for administering the vaccine to be determined on a local basis by each county medical society.

Miscellaneous Actions

In considering a wide variety of resolutions and annual and supplementary reports, the House also:

Approved a statement that physicians have an **ethical obligation** to participate in medical society activities and express their opinions fully and freely.

Reaffirmed AMA policy that it is not considered unethical for a physician to own or operate a **pharmacy** provided there is no exploitation of the patient.

Agreed with the Judicial Council that the physician himself is responsible for the control and custody of **drug samples** once they come into his possession, and in the high tradition of the medical profession he should not dispose of them in any way that could cause harm to others.

Approved a recommendation that a special House committee be appointed to investigate all facets of the operation of the **Joint Commission on Accreditation of Hospitals.**

Agreed with the Board's choice of Miami, Florida, as the state for the **1964 Clinical Meeting.**

Approved the combining of the American Medical Education Foundation and the **American Medical Research Foundation into the American Medical Association Education and Research Foundation,** effective next January 1.

Reaffirmed the previous policy that physicians should have the privilege of prescribing drugs by either **generic or brand name.**

Approved the principle of **income tax deductions** for medical care of the aged.

Endorsed the administration of indigent medical care programs developed in cooperation with local medical organizations as a legitimate activity **of state and local health departments.**

Urged the elimination of all "categories" in programs of **assistance to the needy** at the federal and state level, with all assistance provided through a single program.

Referred to the Council on Medical Service a resolution proposing the use of state and federal tax funds to provide voluntary prepayment health insurance protection for the aged. In a related action the House approved of experimentation with **prepayment plans** under assistance programs.

Urged more vigorous promotion of voluntary non-profit prepayment health plans.

Suggested that the Board of Trustees continue its negotiations to develop a group **disability insurance** program for AMA members.

Concurred in the Board's appointment of a special committe to study the organizational status of **AMA Sections,** the function of the Scientific Assembly and existing procedures for establishing medical certifying boards.

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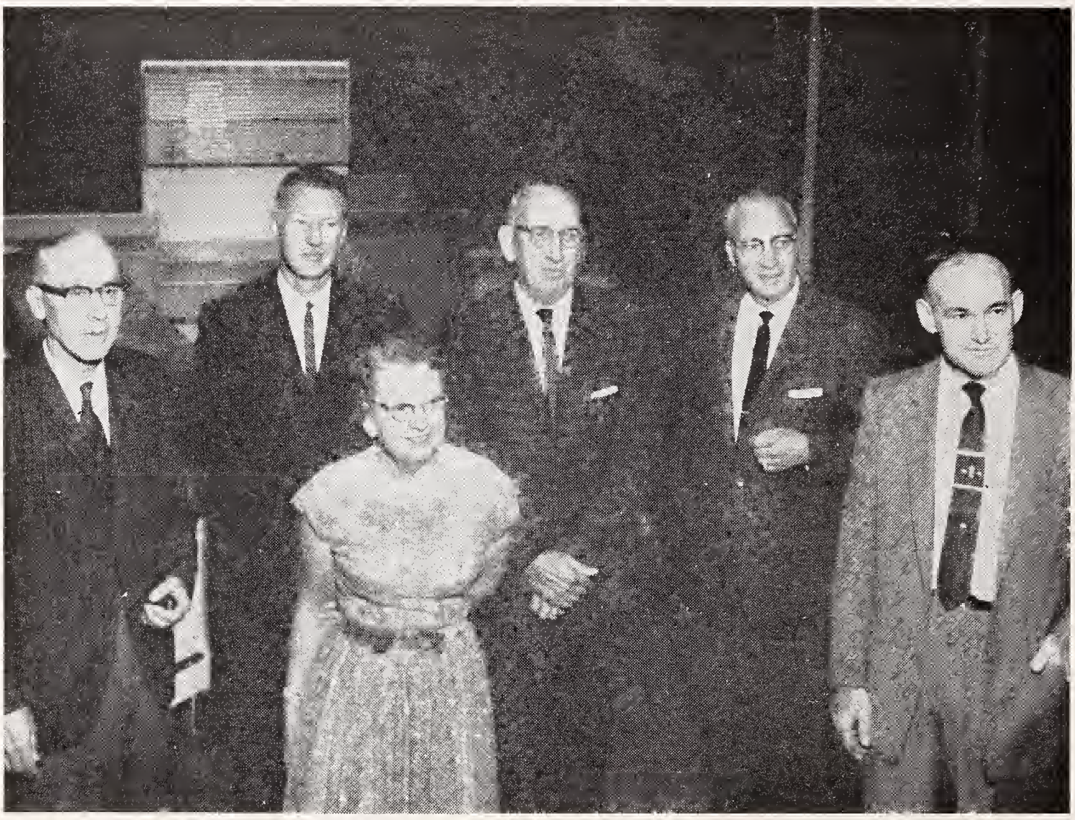

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   B. "To All My Patients"—leaflet for patients explaining types of medical services often involved in treating a patient, encouraging mutual discussion of fees and services. 12 pages.
   C. "To All My Patients"—laminated plaque for display in doctor's office encouraging mutual discussion of fees and services between doctors and patients. Sells for $1.00.

II. VOLUNTARY HEALTH INSURANCE
   A. "A Buyer's Guide to Voluntary Health Insurance"—guide for consumers in purchasing types of coverage. 16 pages.
   B. "Let's Use, Not Abuse Health Insurance"—illustrated leaflet for public explaining how to use insurance to get the most for each dollar of protection. 8 pages.
   C. "Health Benefits for Retirees—A Voluntary Approach"—a speech which describes recent achievements in this field, economic advantages of private vs. government program. 13 pages.

III. HELP TO THE NEEDY AND NEAR-NEEDY AGED
   A. "Helping Those Who Need Help"—explanation of Kerr-Mills bill as opposed to the King Bill as the proper mechanism for meeting the health needs of the aged. 12 pages.
   B. "Medical Aid To the Aged"—why Kerr-Mills bill deserves support coupled with reasons why socialized medicine for the aged should be rejected. 8 pages.
   C. "AMA News Reports on Medical Aid for the Aged"—reprints of selected articles and editorials, 1961. 16 pages.
   D. "Ensuring Medical Care for the Aged"—review of book by Mortimer Spiegelman. 2 pages.
   E. "Reasons for Opposition to Social Security Approach to Medical Care for the Aged"—describes general objections to the compulsory social security approach and explains reasons why AMA supports the Kerr-Mills program. 4 pages.
   F. "No One Without Adequate Medical Care"—a speech describing medicine's guarantee of care for all, regardless of ability to pay. 12 pages, 1960.

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IV. HEALTH OF THE AGED

A. "Unlock Your Community Resources"—manual of non-legislative public service projects in area of aging for medical societies. 36 pages. Limited distribution.

B. "A Blueprint for the New Era of Aging, A Positive Health Program for Older Citizens"—six challenges to medicine in the field of aging. 24 pages.

C. "Health Aspects of Aging"—reprints of JAMA articles on aging population in relation to health with discussion of basic aspects of aging problems. 71 pages.

D. "Forethought for Health"—Discusses the benefits of periodic health examination as supplemented by annual checkups. 4 pages.

E. "Guides for Medical Care in Nursing Homes and Related Facilities" —suggests basic standards for consideration in reviewing or developing medical programs and services for patients in nursing homes and homes for the aged. 1 page.

F. "Nursing Homes"—Tells how to choose a nursing home. 6 pages.

G. "Old Man Young"—Film, which presents a positive view of later years. Color, sound, 16 mm, 28 minutes. Black and white cleared for television.

H. "Legal and Socio-Economic Activities in the Field of Aging"—a speech describing activities of the AMA in promoting health care of the aged. 9 pages.

I. "The Right to be Useful"—discusses jobs for the aged. David B. Allman, M.D., 12 page speech.

V. PHYSICIAN'S SUPPLY

A. "Opportunities and Rewards of Medicine"—leaflet for students outlining career opportunities in medicine, listing curricular requirements for admission to medical school and related information. 8 pages.

B. "Medicine As A Career"—handbook for medical representatives, high school and college faculty advisors and vocational guidance counselors only, containing extensive information on preparation for and study of medicine, including costs, scholarships and loans available. 24 pages.

C. "A Career in Medicine"—an exhibit outlining opportunities in medicine for career days, guidance forums, health fairs, community showings. 8 linear feet.

D. "I Am A Doctor"—25 minute sound, color, 16 mm dramatic film portraying opportunities and challenges of careers in medicine. Cleared for TV.

D. "Helping Hands for Julie"—27 minute, black and white, sound 16 mm film, showing career opportunities in medicine and health. Story line revolves around Julie and her fight for life when she is brought into the hospital emergency room—diagnoses unknown. Produced for AMA, American Hospital Association, and E. R. Squibb & Sons. Cleared for television.

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Minnesota Blue Shield

Dr. Richard C. Cranmer retired last month as Executive Director of Minnesota Blue Shield, after serving the doctor-sponsored medical-care plan in various capacities for 14 years. He will continue to serve on the Blue Shield Board of Directors, of which he has been a member since the founding of the organization in 1947.

Dr. Cranmer was named Executive Director in late 1959. He agreed to accept the post long enough to guide the extensive reorganization program on which Blue Shield was embarking at this time.

Under his direction, staff and facilities were set up to handle all Blue Shield operations on an independent basis. This included purchase and remodeling of the plan's present headquarters building in St. Paul; recruiting and training personnel for the Division of Enrollment and Service, and other departments; installation of automatic data processing systems for accounting, billing, claims and record keeping operations.

Setting up this program, in many respects comparable to organizing and staffing a totally new organization, while at the same time carrying on Blue Shield's operations as the State's largest medical-care plan, was a complex and challenging administrative task.

The development of the Blue Shield rider covering hospital expenses, which was introduced in October, 1961, was regarded as a final phase of the reorganization program.

Dr. Cranmer and Dr. Olof I. Sohlberg, St. Paul, present Secretary of the Blue Shield Board of Directors, were among the Minnesota medical profession's earliest advocates of a pre-payment medical-care plan.

In 1945, before the House of Delegates of the Minnesota State Medical Association, Dr. Cranmer introduced the first motion calling for the establishment of such a plan in this State. This led to the development of Minnesota Blue Shield which began operating in 1947.

Dr. Cranmer served as Vice President of the Blue Shield Board of Directors from 1947 to 1955, and as president from 1956 to 1959.

In 1959, as he was rounding out 50 years as a surgeon, he retired from his Minneapolis practice to devote full time to his duties as Executive Director of the Blue Shield plan.

His predecessor as executive head of the Blue Shield plan was Dr. Edwin J. Simons, who served in this position from 1954 to 1958.

Dr. Cranmer's successor is Thomas C. Paton, formerly Director of Sales for Michigan Blue Shield.

Mr. Paton has held various administrative positions in the Michigan Blue Cross-Blue Shield plans for the past 15 years. Prior to his appointment as Director of Sales, he was for five years Director of Professional and Hospital Relations for Michigan Blue Shield.

Mr. Paton, 38, is a graduate of Michigan State University.

He took over his duties as Executive Director of Minnesota Blue Shield at the end of last month.

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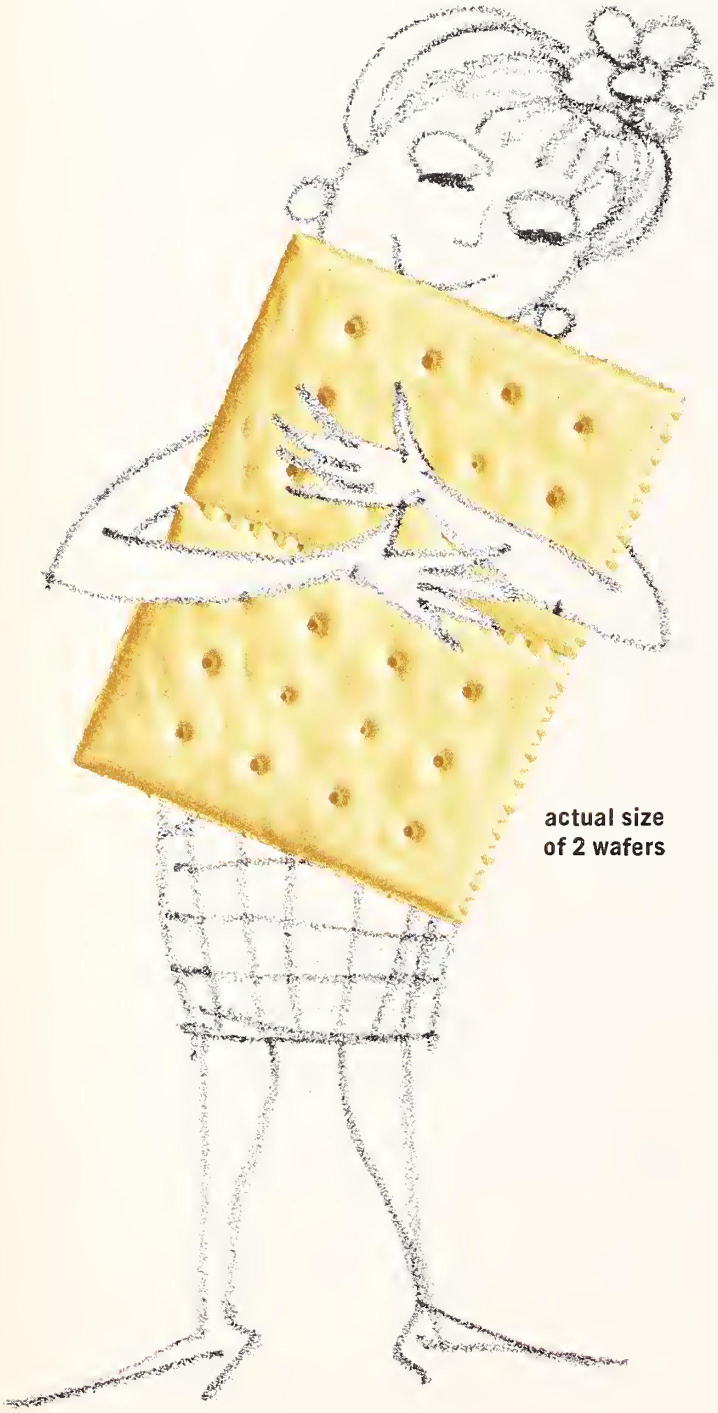
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Dosage: 1-2 wafers between meals, as needed, or as directed by physician.

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Meetings and Announcements

JANUARY-1962

International Medical Assembly of Southwest Texas will hold its 26th Annual Session in San Antonio, Texas, January 29-31, 1962 at the Granada Hotel. Contact: S. E. Cockrell, Exec. Secretary.

The International Medical Congress and the University of Southern California will hold its First Inter-American Conference on Congenital Defects at the Statler Hotel, Los Angeles, January 22-24. Contact: Stanley E. Henwood, IMC-New York.

American College of Surgeons Meeting, January 29, 30, 31, February 1. The Statler-Hilton and The Biltmore Hotels, Los Angeles. Contact: American College of Surgeons, Chicago.

Mayo Clinic and Mayo Foundation postgraduate course on "Clinical Rheumatology" on January 22, 23, and 24. Contact: M. G. Brataas, Mayo Clinic, Rochester.

Medical College of Georgia Postgraduate Course "Obstetric Problems in Private Practice" January 23-25. Contact: Dr. Claude-Starr Wright, Medical College of Georgia, Augusta, Georgia.

FEBRUARY

American College of Radiology Convention, February 7-10, Roosevelt Hotel, New York. Contact: College, 20 N. Wacker Drive, Chicago.

Chicago Ophthalmological Society Conference February 16-17, Drake Hotel, Chicago. Contact: Mrs. Mary E. Ryan, 1150 N. Lorel Avenue, Chicago.

International Medical Legal Society Seminar in Honolulu, Hawaii, February 17-24. Contact: Wm. P. Hauser, M. D., IMLS, Tacoma, Washington.

Illinois Association for Maternal and Infant Health Sixth Congress February 7, 8, 9 at the St. Nicholas Hotel, Springfield. Contact: Mrs. Patricia Dorr, IAM&IH, Chicago.

New York University Medical Center Symposium on Infertility on February 8, 9, 10. Contact: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York, New York.

MARCH

New Orleans Graduate Medical Assembly Meeting March 12, 13, 14 and 15 at the Roosevelt Hotel, New Orleans. Contact: Office of the Assembly, 1430 Tulane Avenue, New Orleans.

American College of Surgeons Three-Day Sectional Meeting, Detroit, March 5-7, Sheraton-Cadillac Hotel. Contact: American College of Surgeons, Chicago. Also, three-day Section Meeting, Memphis, Tennessee, March 26-28, Hotel Peabody.

APRIL

West Virginia Academy of Ophthalmology and Otolaryngology Meeting, April 23-25 Greenbrier Hotel, White Sulphur Springs, West Virginia. Contact: Dr. Worthy W. McKinney, 109 E. Main Street, Veckley, West Virginia.

American College of Surgeons Meeting, April 16-18, Sheraton-Park Hotel, Washington, D. C. Contact: College, Chicago.

American College of Allergists Graduate Course and Congress, April 1-6, Hotel Radisson, Minneapolis. Contact: John D. Gillaspie, 2141 14th St., Boulder, Colorado.

University of Illinois College of Medicine Postgraduate Course in Laryngology and Bronchoesophagology April 2-14. Contact University, 1853 West Polk Street Chicago.

ANNOUNCEMENTS

Next scheduled examination (Part II), oral and clinical, for all candidates will be conducted at the Edgewater Beach Hotel, Chicago April 9-14. Contact: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland.

American Therapeutic Society Prize Essay of $500 to be awarded. Manuscript and approving letter from chief of service must be in hands of Secretary, Oscar B. Hunter, Jr., 915 19th Street N. W., Washington, D. C, by March 1.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota: Pediatric Neurology February 12-14; Anesthesia for Specialists March 5-7; Treatment of Traumatic Injuries March 16-17; Otolaryngology for General Physicians, April 12-14; Internal Medicine April 16-18; Surgery April 26-28, Gynecology April 30-May 2.

* *

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: January 15-February 2; March 5-23; April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

* *

American Diabetes Association will hold Postgraduate Course "Diabetes in Review" January 17, 18, 19 in Detroit and Ann Arbor. Write: American Diabetes Association, New York.

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In Memoriam

E. MENDELSSOHN JONES

Dr. E. Mendelssohn Jones, former president of the Minnesota State Medical Association and prominent St. Paul surgeon, died December 7th, after a prolonged illness.

He was born in Columbus, Ohio and graduated from the University of Minnesota school of medicine. Dr. Jones was elected chief of staff at Ancker hospital in 1931 and later became physician and surgeon in charge at Stillwater prison. He was appointed to the state board of medical examiners and was a professor of surgery at the University of Minnesota and a councilor for the State Medical Association.

Dr. Jones was a former president of the Ramsey County Medical Society, a member of the Minnesota State Medical Association, American Medical Association, the American College of Surgeons, the Western Surgical Association, the Minnesota Surgical Society, the Minnesota Academy of Medicine and the St. Paul Surgical society.

He is survived by his wife and a daughter.

THOMAS ZISKIN

Dr. Thomas Ziskin, 72, Minneapolis heart specialist, died November 18th.

He was associate professor of medicine at the University of Minnesota from 1920 to 1946 and chief cardiologist at the Minneapolis Veterans hospital during this same period.

Born in Grand Forks, he graduated from the University of Minnesota medical school. Dr. Ziskin was a life member of the Hennepin County Medical Society, Minnesota State Medical Association and a member of the American Medical Association. He was a member of the American and Minnesota Heart Associations, the Central Society for clinical research and active on the staff of Mount Sinai hospital.

He is survived by his wife and a son.

ELMER S. SCHUTZ

Dr. Elmer S. Schutz, 64, died October 9th, while dressing in preparation for surgery at Bethel hospital in Mountain Lake.

He was born at Pandora, Ohio and graduated from Rush Medical college in Chicago. Dr. Schutz practiced for 36 years in Mountain Lake until his death.

Dr. Schutz was a member of the Southwestern Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was active in civic affairs of his community, having served as president of the Mountain Lake Board of Education for a number of years and an active member in the Community Club and County Nursing Board. Dr. Schutz also was the County Health Officer of Cottonwood county.

He is survived by his wife, two daughters and a son.

PETER C. PETERSEN

Dr. Peter C. Peterson, 59, Minneapolis physician, died November 22. Before opening his office in Minneapolis in 1950, Dr. Petersen practiced in Ogilvie, Braham and Mora.

He was born in Denmark and graduated from the University of Nebraska Medical School. He was a member of the Hennepin County Medical Society, Minnesota State Medical Association and the American Medical Association.

He is survived by his wife.

ROLLAND E. KEEFE

Dr. Rolland E. Keefe, 54, practicing St. Paul physician for twenty years and physician at the Anoka state hospital, died of a heart attack December 1 en route to a hospital.

Dr. Keefe was born in St. Paul and graduated from the University of Minnesota medical school. He was a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association.

He is survived by his wife and one son.

Physician's Diary

Dr. James W. Kernohan, senior consultant in pathologic anatomy in the Mayo Clinic, gave the Carl V. Weller Lecture of the Michigan Pathological Society at Ann Arbor during December.

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Dr. R. K. Minge of Worthington was recently elected president of the Southwestern Minnesota Medical Society. Named president-elect to take office next year was **Dr. Dean Nywall,** Slayton. Other officers are: **Dr. John Stam** of Worthington, vice president, and **Dr. O. M. Heiberg,** also of Worthington, secretary-treasurer. **Dr. Roy F. Pierson,** Slayton, and **Dr. Harold Stratte,** Windom, were named censors.

* * *

Dr. Dallas Glick has established his medical practice in the office of the late **Dr. Elmer S. Schutz** of Mountain Lake.

* * *

An article by **Dr. Hamilton Montgomery,** Mayo Clinic, recently appeared in the October, 1961 number of "Der Hautarzt" ("The Dermatologist") published in Berlin, Germany.

* * *

Dr. John W. Clarke of the Lakeview Clinic was elected chief of staff of the Waconia Community Hospital, in October. Other officers include: **Dr. Charles Bean** and **Dr. Bernard W. Lenz.**

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the blocks seem much shorter...he can walk many more of them in comfort

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Dr. Louis L. Flynn spoke at a meeting of Our Lady of Peace Parents' club in Minneapolis.

* * *

Dr. H. A. Palmer, Blackduck, attended the twenty-fifth anniversary of his graduating class at the University of Minnesota Medical School during November.

* * *

Dr. Sumner S. Cohen of St. Louis has been appointed medical director of the nursing home and tuberculosis treatment center at Glen Lake.

* * *

At the fall meeting of the Minnesota Obstetrical and Gynecological Society, **Dr. Martin O. Wallace,** Duluth, was elected president. Other officers elected were: **Dr. Alex Barno,** Edina, vice president; **Dr. Bruce F. P. Williams,** Duluth, secretary-treasurer; and **Dr. Melvin D. Sinykin,** Minneapolis, to the board of governors.

* * *

Dr. Richard Zarling, Minneapolis, spoke on "Hostility" at the Calvary Lutheran Church of Golden Valley in November.

* * *

One of the speakers at the 12 County Medical Societies Conference on Disaster Medical Care in Chicago in November was **Dr. John C. Ivins,** chairman of Mayo Clinic's disaster committee.

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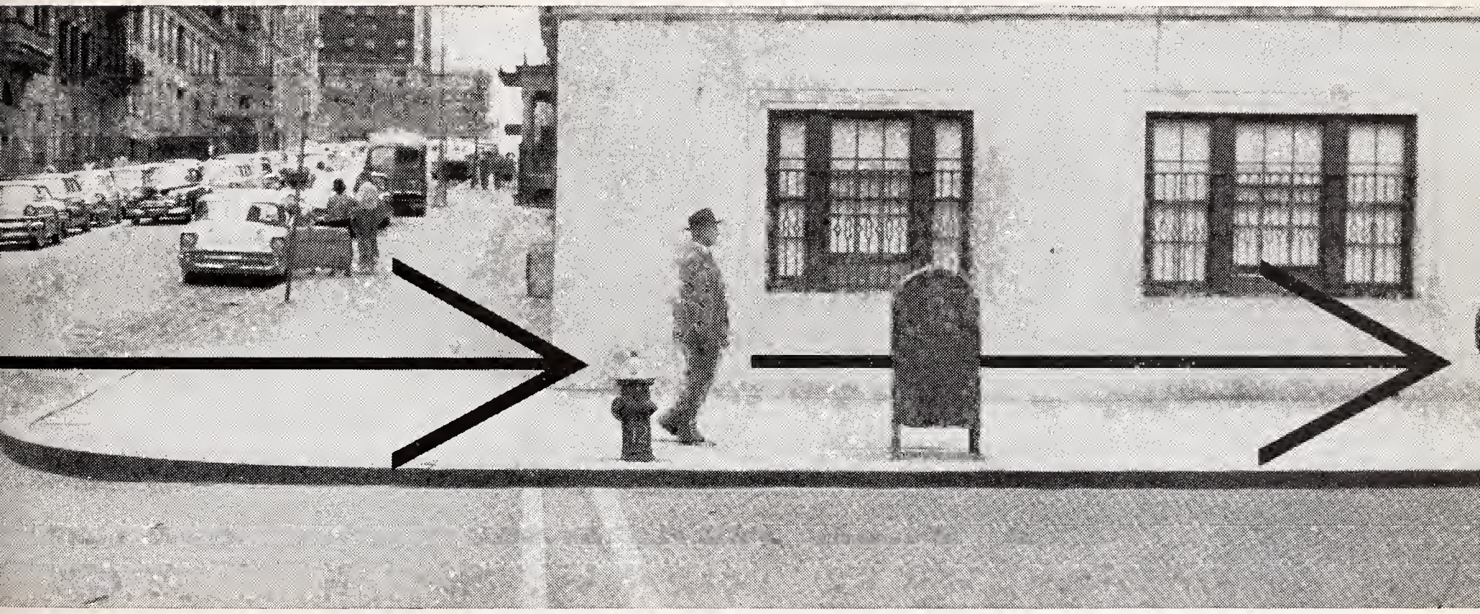

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References: (1) Malone, F. J., Jr.: *Mil. Med.* 125:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* 34:187, 1959. (3) Ullman, A.: *Delaware M. J.* 32:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* 108:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* 10:694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* 11:392, 1960.

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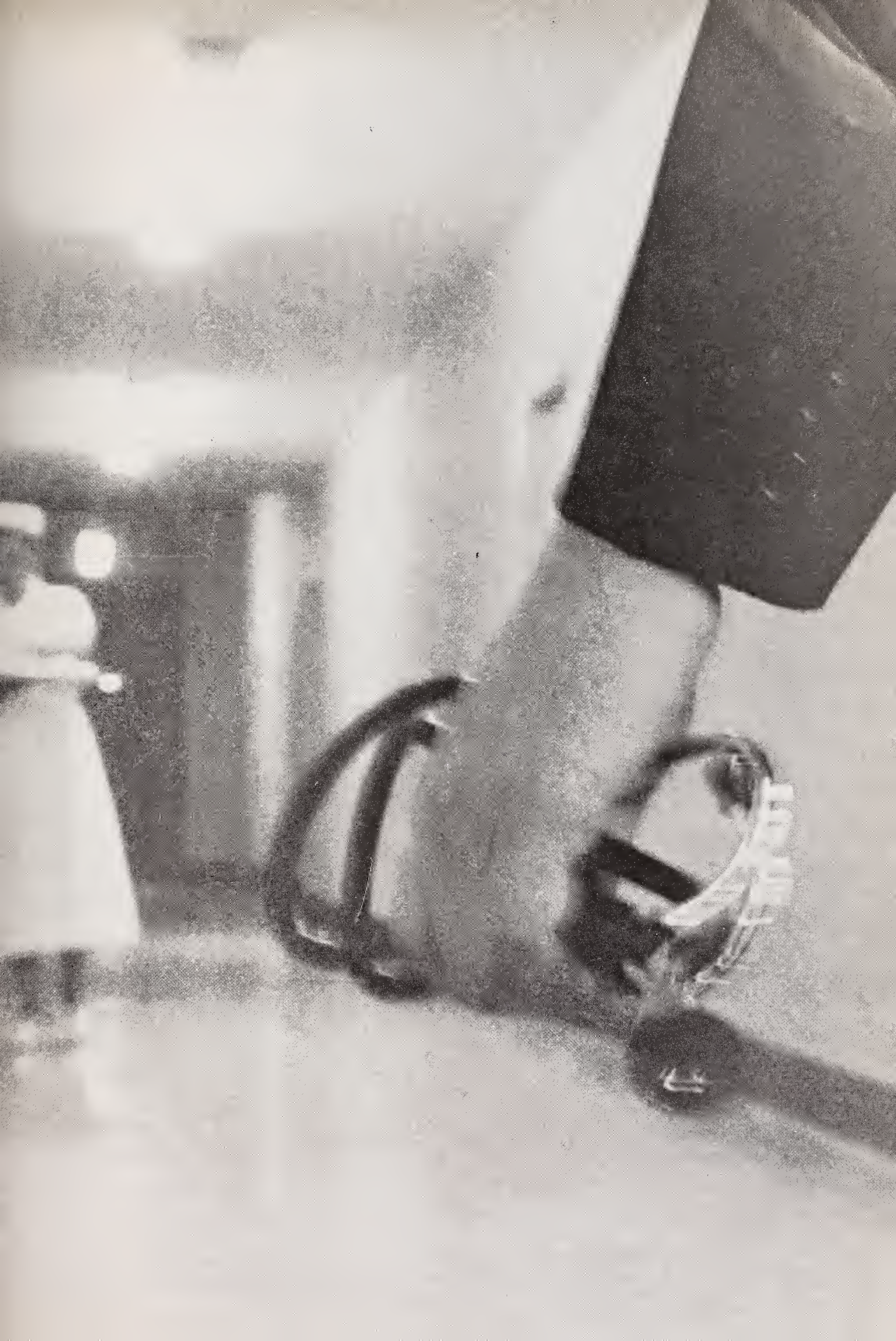

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President's Letter

HEALTH INSURANCE

GREETINGS:

Subtly, within the past two decades, there has occurred a major change in the traditional relationship between a patient and his physician. I have reference particularly to the emergence of health-insurance programs.

The adjunct of health-insurance protection, while it requires adaptation on the part of both physician and patient, is good. With the aid of such programs our patients can effectively budget and plan in advance for the inevitable cost of illness. Should major expenses be incurred from such illness, they can be covered in a large measure by insurance protection. Those who have exercised the foresight and initiative to budget the costs of medical care probably seek medical attention earlier, when disturbing signs or symptoms occur, than do those who have not been so prudent. The emergence of widespread voluntary insurance coverage of the costs of health care has reaffirmed and strengthened in an important field man's right and privilege to provide for his own destiny without intervention on the part of the state.

The development of health-insurance protection in America has been most remarkable. The Health Insurance Council reports that from 1940 through 1960 the following increments occurred in the numbers of persons covered by such insurance:

Hospital insurance, from	12,300,000 to 131,900,000
Surgical-care insurance, from	5,300,000 to 121,000,000
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A latecomer in the field, yet a most important one, is that type of coverage which provides for major medical expenses. This means of protection has grown within the past decade to include 27,400,000 persons. Those more than 65 years of age have been increasingly provided with the advantages of insurance protection against the costs of illness. H. L. Rietz, president of the Health Insurance Association of America, reports that at present more than 50 percent of our senior citizens have some form of health-insurance protection. Accompanying the growing number of persons who are thus protected, there likewise has been an increase in the adequacy of the coverage provided. All of us can take pride in this accomplishment, but impressive as it is, the services concerned must be constantly supported, improved and extended.

The costs of health-insurance protection, compared with other essential and some non-essential expenses, represent a good buy. Yet the costs of such protection are by no means insignificant. The fact that health-insurance protection has become progressively more costly is disturbing. It calls for a re-emphasis upon the responsibilities we all share . . . the physician, the hospital, the insurance carrier and the patient.

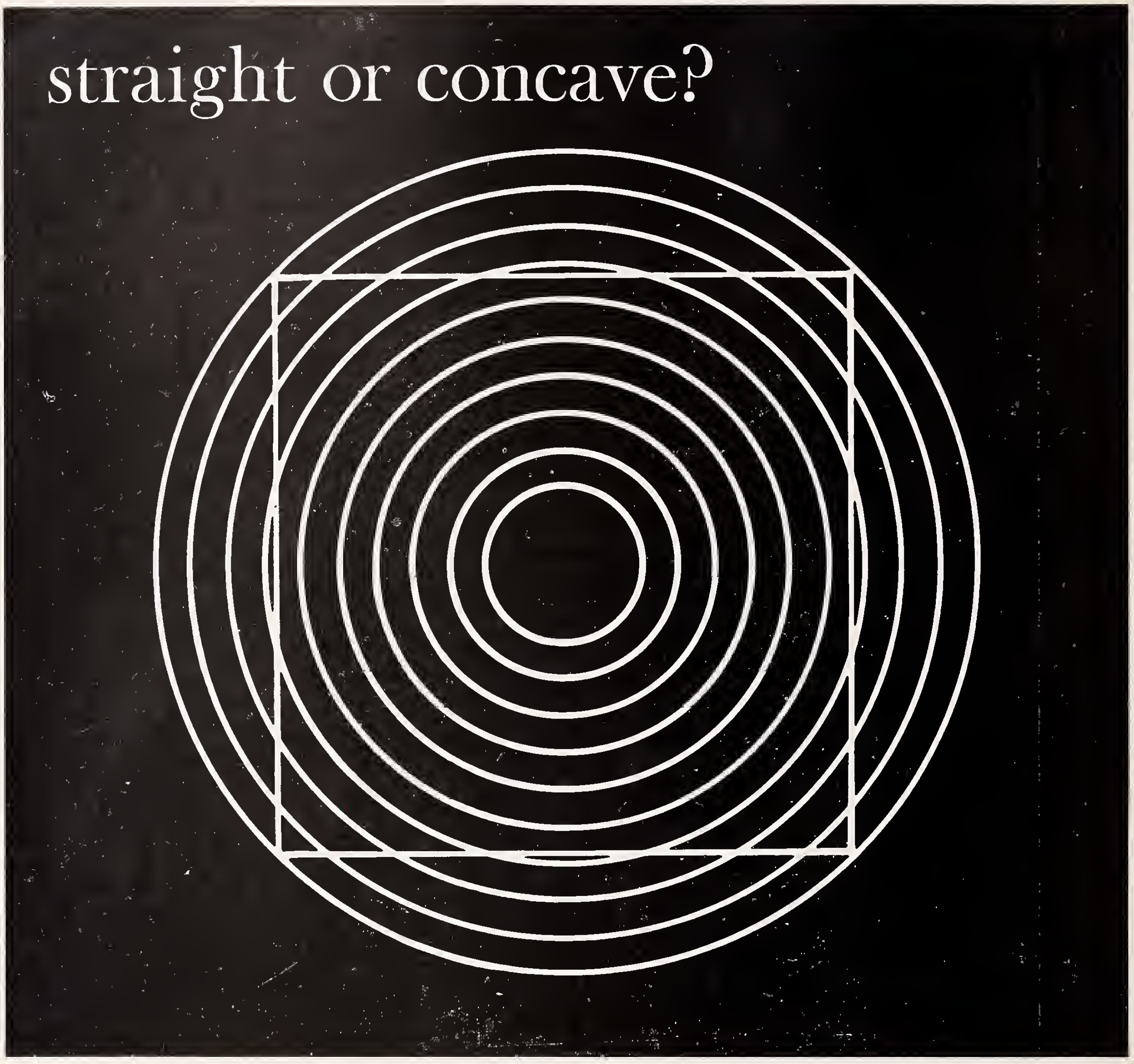
With respect to the physician's responsibility, he must be ever alert to prevent extravagances with the insurance dollar, for as certainly as health dollars are wasted, just as certainly the cause of free enterprise in health matters is deeply hurt. The physician must resist pressures which tend toward overuse of medical and hospital facilities, such as that extra day or two of hospital care for reasons less compelling than the indications based on true health . . . the pernicious practice of hospitalizing patients for studies which might be carried out as effectively on an ambulatory basis . . . digression from a fee schedule because of insurance benefits which might thereby accrue to the patient. The physician must wholeheartedly espouse the cause of insurance protection for his patient. One might paraphrase Dante's observation that "the hottest fires of hell are reserved for those who, when moral issues are at stake, maintain a position of strict neutrality."

Every member of our society can make a contribution to the principles of voluntary health insurance. To do so is a major step toward maintaining within the framework of free enterprise the health services provided in our communities.

Sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association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1. Griffith, R. S.: Antibiotic Med. & Clin. Therapy, 7:129, 1960.

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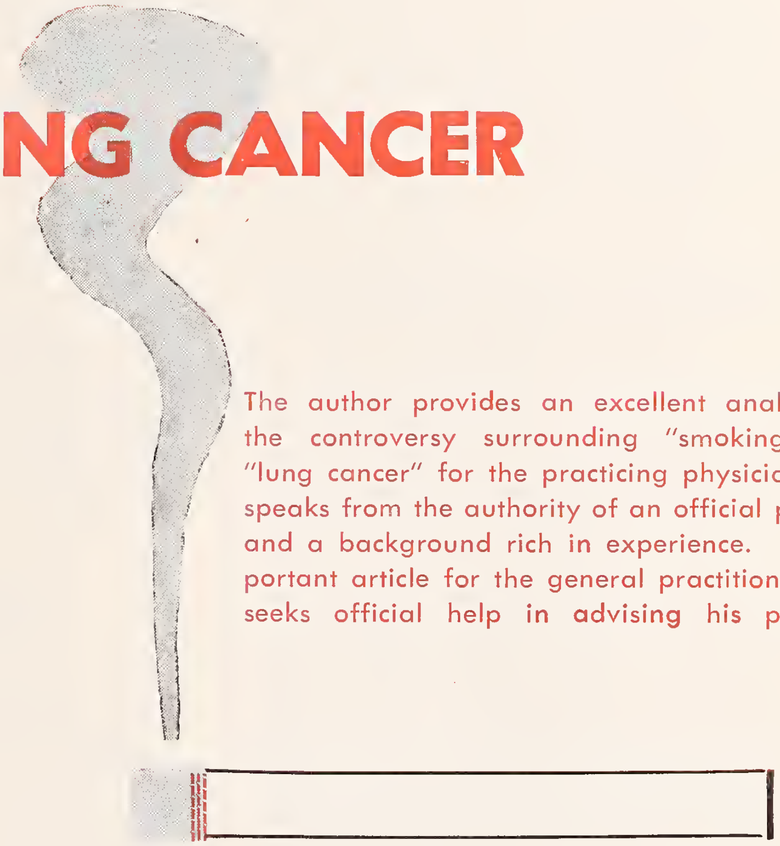
Medical Practice and LUNG CANCER



LEWIS C. ROBBINS, M.D.
Washington, D. C.

The author provides an excellent analysis of the controversy surrounding "smoking" and "lung cancer" for the practicing physician. He speaks from the authority of an official position and a background rich in experience. An important article for the general practitioner who seeks official help in advising his patients.

Three decades ago, the death rate from lung cancer began to increase at a phenomenal rate, and continues to do so. Medical investigators, principally in the field of epidemiology but in other fields as well, began to look for reasons behind this increase. In the early part of the 1950's, medical science had excluded what appeared to be the non-essential variables, and had found one factor strongly associated with lung cancer: cigarette smoking.

In the years following the early papers, other studies confirmed their findings, and made numerous explorations into the unknown aspects of the smoking and lung cancer relationship. These studies, mostly upon the chemistry and physiology of smoking, reinforced the association first unearthed by the careful application of epidemiological principles.

But from the first hint of a relationship between smoking and lung cancer there was controversy, and the controversy continues. Why?

To a practitioner of preventive medicine, the findings of the epidemiologists appear to offer a possibility for preventing a very important and a therapeutically recalcitrant disease. Many medical practitioners looking for opportunities in preventive medicine feel the same way; yet most practitioners have seemed reluctant to take a position against cigarette smoking in the face of apparent contradictions in the evidence.

Chief, Cancer Control Program, Bureau of State Services, Public Health Service, U. S. Department of Health, Education, and Welfare.

Presented at Methodist Hospital, St. Louis Park, Minnesota, Nov. 19, 1960, symposium on "Cancer Protection in Office Practice."

To discover what physicians think about smoking and lung cancer, staff members of the Cancer Control Program have spent several hundred hours in discussions with groups of physicians, and have participated in numerous conferences and meetings in various parts of the United States. These discussions have brought out one important fact that seems to hold true throughout the country: there are too many differences between medical research and medical practice to permit either to speak for the other. At the same time, these differences have led to certain confusions.

Differences Between Investigator and Practitioner.

What are these differences? Given any medical problem, differences between medical practitioners and medical investigators begin with their objectives. The primary objective of the investigator is to acquire knowledge which is universally valid and serves all mankind. For his work to terminate in knowledge, the investigator is obligated to a rigorous application of scientific methodology, to a protocol that requires reproducibility of results by others under similar conditions, and to a process of eliminating variables until only those that can be controlled and tested and verified remain. Finally, in searching for universally applicable truths, time is not of the essence. The investigator resists any attempts to saddle him with deadlines and time limits.

The primary objective of the practitioner, on the other hand, is to maintain the health of his patients, or, if he is a practitioner of public health, the health of a specific population. But neither the individual patient nor the specific population can be examined under laboratory conditions. This means that the practitioner must accept all the variables that come to him in the person of his patient, and deal with them the best that he can. Indeed, his patients often present him with so many variables that he can seldom be sure of what he achieves. And finally, for the practitioner, time *is* of the essence: his objective is to preserve and protect the individual before the pathological process is irreversible. Nowhere is the importance of the individual better demonstrated than in the doctor-patient relationship.

Perhaps the cardinal difference between medical practitioners and medical investigators can be illustrated in this way: In the June 11, 1960 issue of the **JAMA,** an article appeared on "The Errors of Medical Studies," by Dr. George L. Saiger. In this article, Dr. Saiger points out that "every clinical trial involves some ethical problems." He goes on to say: "Failure to recognize this problem or to devise means to cope with it is the most serious error that can be committed in a medical study. A typical example concerns the advisability of withholding treatment when it may possibly be of value."

The practitioner, fortunately, does not have to worry about errors that might adversely affect a controlled study. It is inconceivable that the practitioner would ever think it "advisable" to withhold any treatment that, in his judgment, might possibly be of value to his patient. The practitioner "plays the percentages" to win any contest for health waged by his patient.

Implication of Differences Between Practitioner and Investigator

One of the significant implications of the differences between medical practice and medical investigation is that, while the investigator must strive for total knowledge and conclusive proof, the practitioner must take the knowledge at hand and apply what seems best for his patient while there is still time. The practitioner can ignore nothing that will increase the likelihood that his patient will live a longer or healthier or less painful life. Like Plato's "courageous man," the practitioner cannot wait until human knowledge is complete before he acts; he must always act from a basis of available knowledge. Suppose that carefully controlled studies of a drug show that some patients with specific conditions could benefit by this drug. Suppose further that this drug is the best available. Then, even though it may not work 100 percent of the time or may not be fully understood, the practitioner will use that drug.

This does not mean that medical practitioners or public health officers can have scientific standards lower than the medical investigator's. The practitioner's conscience, his professional education, his professional society, his specialty, his hospital, and other members of his profession constantly impel him to improve his knowledge and raise his standards of medical practice. The work of the health officer, too, is constantly exposed to pressures urging him to meet the exacting standards of public health. His work is open to criticism from fellow scientists and practitioners at all times.

Three Responsibilities of the Practitioner

The manifold responsibilities of the practitioner make it necessary for him to take account of these forces and pressures moving him to higher standards of practice. Among these responsibilities, we may take note of three.

1) To be scientific.

First, as the AMA Principles of Medical Ethics insist, he must "practice a method of healing founded on a scientific basis." But it is not science alone; it is science-in-relation-to-patients. He knows that scientific knowledge is not complete and never will be complete. In this regard, one of his greatest problems is how to practice when the scientific evidence is not conclusive.

2) To search for advantages for his patients.

Second, as we have seen, the practitioner always attempts to give his patient whatever advantages he can. Nothing characterizes the doctor-patient relationship more than the constant, energetic application by the practitioner of what he believes to be good for his patient. To do so is not often easy; in many instances, it is a matter of playing the percentages. Sometimes the percentages are large; sometimes small. For example, a Connecticut study (1) has shown that if cancer of the cervix is found and treated while still localized, 5-year survivals are about 65 percent. If there is regional involvement, 5-year survival is only about 33 percent. On the other hand, if this cancer can be discovered at Stage O, carcinoma in situ, theoretically 100 percent of the women would survive at least 5 years. Thus, early diagnosis of cancer of the cervix, now possible through a routine Pap smear, will place his patient in a group having a statistical advantage in 5-year survival. The practitioner believes it to be good practice to search for such advantages for his patients.

3) To practice promptly and adequately.

The third responsibility of the practitioner is to apply his knowledge in time and adequately. So much importance has been attached to time in the treatment of cancer that early treatment needs no defense. The American Cancer Society has said that "treatment delayed may be treatment denied."

Adequacy refers to the completeness with which any medical procedure is carried through: not the excision of part of a cancer, but all of it; not the recommendation to a chronic alcoholic to have a few drinks, but to have no drinks.

Let us now consider the differences between medical practice and medical investigation more specifically as they affect attitudes and action on the issue of smoking and lung cancer.

The Basic Evidence Against the Cigarette

From all the studies on smoking and lung cancer, we may point to three key facts over which there seems to be no disagreement.

First, there are chemicals in cigarette smoke that will experimentally produce skin cancer in animals. Various reports list the number of these animal carcinogens from 5 to 18. (2) One of the carcinogens, benzpyrene, was the first human carcinogen to be so identified: it was the cause of scrotal cancer in chimney sweeps, as discovered by Potts in England.

Second. Cigarette smoke injures the bronchial epithelium. Cigarette smoke produces partial paralysis and injury to the cilia in the bronchial epithelium. (3, 4, 5, 6)

Third. Mortality from lung cancer is higher in cigarette smokers than it is in nonsmokers. (7, 8, 9)

Interpretation of the Evidence

Although these three key facts are undisputed, their meaning is not. Here, the differences between medical investigation and medical practice enter in. The medical investigators, for example, who made the first 9 studies of lung cancer cases, found a higher percentage of lung cancer patients admitting a smoking history than could be expected in the general population. Other medical investigators looked at these findings unearthed by their fellow investigators and quickly criticized them for being retrospective studies. They felt that there was the strong possibility that cancer patients thought they were supposed to say they smoked cigarettes. Following upon this criticism, three prospective studies were undertaken. Together, these studies followed almost a half million people whose smoking history had been established. As the people under study began to develop lung cancer or to die of the disease, one thing was clear, and there was remarkable agreement among the three studies: about 10 times more lung cancer appeared during the study period among the cigarette smokers than among the nonsmokers.

If smoking was so highly associated with lung cancer, then surely there must be a reason. Medical science accelerated its search for the etiological agent or agents that might be responsible. Scientists established beyond doubt the paralytic effect of cigarette smoke upon the bronchial cilia, and offered an hypothesis (10) that cancer pathogenesis could be explained by the slowness with which damaged cilia removed mucus, with its collection of insoluble tar particles, from the lungs.

In a comprehensive study of histologic sections of smokers' and nonsmokers' bronchi taken at autopsy, Auerbach (11, 12) showed a significantly higher percentage of cellular changes, thought to be premalignant, among smokers than among nonsmokers. At the same time, other scientists were isolating chemical substances that proved carcinogenic when applied to the skin of animals.

Still, there were medical scientists critical of these findings by their fellow workers. No one agent had yet been isolated as the cause of lung cancer in man; no one agent had been shown, under controlled conditions, to result in cancer, and, in its absence, not result in cancer of the lung. Nor has this been shown today. Further, some scientists believe that it may never be possible to demonstrate conclusively that specific ingredients of cigarette smoke "cause" lung cancer. Their belief is based on two main contentions: first, the "incubation" period of lung cancer may be as long as 20 to 40 years; and second, it appears impossible to carry out a controlled study, using human beings, which would permit the elimination of unessential variables.

Lacking definite proof, as that term may be understood in the biological sciences, there can be no wonder that there are many different beliefs about the relationship of smoking to lung cancer. At one extreme, Joseph Berkson states that, "In my opinion, all available relevant facts considered, it seems very doubtful that smoking causes cancer of the lung." (13) At the other end of the spectrum, the Joint Report of the Study Group on Smoking and Health concluded that: "The sum total of scientific evidence establishes beyond reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid carcinoma of the lung." (14)

This presents a problem for the practitioner: How is he to operate in a scientific manner in the presence of such a wide range of opinion? Does it mean that he must stay out of the situation, insofar as his patient is concerned, until all the questions are completely resolved? If knowledge has to be conclusive then, just how conclusive must it be before the physician may apply it in his own practice? Finally, considering the differences in objectives of investigators and practitioners, and the degree to which each can control his variables, just how relevant to the practitioner and to his patient now are the questions that should and do occupy the attention of medical investigators?

Positions Taken by Practitioners

Those facts about smoking and lung cancer that are undisputed, the continuing exploration of pathogenesis, and the interpretations that have given rise to so much debate have all been weighed and considered and acted upon by a number of physicians, collectively and individually. Many national voluntary organizations, health agencies, special study groups, and other medical groups speaking collectively have made public statements committing them to a position that finds against cigarette smoking, and that asserts the opportunity in this regard for the practice of preventive medicine.

The position of some physicians may be gathered from a report by Snegireff and Lombard on the smoking habits of more than 4,000 Massachusetts physicians. (15) Between 1954 and

1959, the authors note, the percentage of physicians smoking only cigarettes decreased by 25 percent.

In 1959, too, Dr. Leroy E. Burney, then Surgeon General of the Public Health Service, and speaking for the Service, reached a position similar to other medical organizations and health agencies regarding the hazard of smoking. He said: "Unless the use of tobacco can be made safe, the individual person's risk of lung cancer can best be reduced by the elimination of smoking." (10)

Dr. Burney's final conclusion was made as a public health practitioner and not as a medical investigator. Were he speaking from the responsibility of a medical investigator, the conclusion would have dealt with the adequacies or inadequacies of research designs, and with the unresolved questions that need answering.

Instead, the statement was a practitioner's summary. The statement concluded that the nonsmoker has an advantage when compared to the cigarette smoker in risk of lung cancer. As practitioners of preventive medicine, every practicing physician has the responsibility to search new findings and hard won research for advantages while today's patients may still benefit. In this search, he may well find high priority advantages, based on valid scientific evidence. If the practitioner finds some authorities who doubt such advantages, will not the practitioner give the benefit of the doubt to his patients?

Conclusion

Medical practitioners and medical investigators alike have had the opportunity in the past few years to weigh the evidence that **(a)** condensates from cigarette smoke contain chemicals which are carcinogenic to animals, **(b)** cigarette smoke injures the bronchial epithelium, and **(c)** smokers are at a higher risk of lung cancer than are nonsmokers. None, or very few, deny the validity of this evidence.

For the medical investigator, however, the evidence still does not add up to conclusive proof that cigarette smoke causes lung cancer. And his major problem is to define the conditions under which such proof might be forthcoming. The practitioner, on the other hand, has a different problem and a different responsibility. His concern is for the individual patient—not as an entity in a controlled study, but as a human being whose life he wants to protect. The long "incubation period" of lung cancer in man may be an insurmountable obstacle to the medical investigator; but for many practitioners it appears to be a possible opportunity to prevent the occurrence of a prognostically poor disease, whose damage is irreversible. The investigator can afford to suspend judgment until he has conclusive proof; the practitioner must practice.

Given the evidence on animal carcinogenicity, injury to the bronchial epithelium, and the risk of lung cancer from smoking, the medical practitioner may well ask: "What valid objections can there be to my wanting to prevent lung cancer from occurring in my patient?" "What is more important than the health of my patient?"

The practitioner may also ask, when he is told to suspend judgment on smoking and lung cancer: "Are they telling me this because they seek to improve the quality of medical investigation, or do they seek to improve medical practice?"

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WHAT'S YOUR DIAGNOSIS?

A 66-year-old woman was admitted to the hospital with massive melena and haemotemesis. She weighed 220 pounds.

The past history indicated that she had had a previous attack of coronary disease and had been on anti-coagulants. The anti-coagulant therapy was discontinued.

Physical examination revealed marked obesity. Blood pressure was in shock levels and the physical examination was otherwise not contributory.

Prothrombin time was 22 minutes. Electrocardiogram revealed abnormal changes consistent with myocardial damage and coronary disease.

Transfusions were given to bring the patient out of shock and for 48 hours she was treated with intravenous continuous drip, Levophed, and glucose. The hemoglobin was found to be 6.7 grams. Two units of blood were given and the hemoglobin returned to 9.8 grams. For four successive days she continued to bleed and continued to receive transfusions.

X-ray of the stomach and duodenum revealed no definite evidence of ulcer. She was treated with forced feeding and repeated transfusions but the bleeding apparently continued to persist despite the fact that the output in the stool or in the vomitus did not correspond to the blood intake each day.

After observing the change in the hemoglobin from nine grams to six grams for three more successive days, a laparotomy was done in an effort to identify the source of the bleeding and carry out the procedure which seemed indicated.

See answers page 143

Report of
Four Cases

Rectal cancer metastasizes widely. An interesting group of patients is presented with metastases of carcinoma of the rectum to the heart. The author presents an excellent summary of the problem and will stimulate you with several concepts regarding the spread of cancer to the heart.

Carcinoma of the Rectum with Metastasis to the Heart

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From the available statistics published in 1955, it has been estimated that approximately 36,000 persons died of cancer of the colon and rectum in the United States.[34] The manner by which victims of cancer die is due to the uninhibited growth of the tumor producing cachexia, hemorrhage, and infection. Locally, this may be the result of implantation and/or direct invasion by tumor, and systemically as a result of tumor embolization of the lymphatic and vascular channels.

Cancer of the rectum is known to produce distant metastasis usually to the liver.[19,20] In one series of 600 cases, reported by one of us (HEB) in 1953 the liver was found to be involved in 25.8 percent.[3,4] Pruitt [25] reported a 40 percent incidence of hepatic metastases. Also, it is known that a significant percentage of cancer of the colon and rectum shows venous invasion varying from 15[11] to 61[8] percent. It is our considered opinion that this is the most frequent mode of spread to distant organs. However, a review of the literature reveals a striking paucity of metastasis to distant sites, particular to the heart.

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Table I. Cancer of the Rectum with Cardiac Metastasis

	Ref.	year	Total cases	No. of Rectal Cases	No. of Rectal Cancer with Cardiac Metastasis
Buday and Reichelman	9	1902	1112	1112	9
Peters and Milne	22	1911			1
Warren	36	1933	156 (Large bowel only)	91	1
Bacon and Gilbert	2	1938	318 colorectal		2
Ritchie	26	1941	3000		1
Herbut and Maisel	16	1942	640 Cancer Cases Autopsy	34	1
Prichard	24	1951	4375 Cancer Cases Autopsy		4
Bisel, Wroblenski and LaDue	7	1953	304 Visceral and Cutaneous Cancer	16	1
Gassman and Meadows	14	1954	1424 Cancer Cases Autopsy		2
Baggenstoss Personal Communication	5	1960			3
		TOTAL			25

Incidence

The reason for the apparent rarity of rectal tumors metastasizing to the heart may be the lack of interest in reporting cases although a more plausible explanation is the actual rarity of the condition due to the difficulty for cancer cells to grow in an organ which is constantly in motion and because of the difficulty in entering the coronary arteries which arise from the aorta at right angles.

In a recent review of the literature, Birkun and Chulkov of the Crimean Medical Institute in Russia,[6] collected over 900 published cases of all metastatic tumors of the heart but no specific number of cases with tumors primary in the rectum was made. Herbut and Maisel[16] estimated the frequency of cardiac metastasis to range from 0.03 to 1.4 percent of the total number of necropsies and from 1 to 7.5 percent of the total number of cancer necropsies. The incidence of cardiac metastasis secondary to a primary lesion in the rectum is difficult to estimate accurately. We were able to find only one source of information, the series reported by Gilbert and one of us.[2] In this series of 318 cases, there were two instances of involvement of the heart (epicardium), an incidence of 0.6 percent. Table I shows a tabulation of the cases, published or obtained by personal communication of cancer of the rectum with metastasis to the heart including four cases from our series of 1450 cases of cancer of the rectum. Two of these have been cited in a previous report.[2]

Pathology

Metastasis to the heart from the rectum may involve the parietal pericardium, the epicardium, the myocardium, and the endocardium, all of which have been observed in our cases. In Table II, one will notice that the right side of the heart is the site of predilection which conforms with the observations of Yater.[39] Scott and Garvin[30,31] on the other hand, observed a more frequent involvement of the left side and Morris,[21] Herbut and Maiscl[16] found equal involvement of both sides. The latter cases included all types of cancer, mostly, of the thoracic and abdominal viscera.

Grossly, the tumors may be solitary or multiple and vary in size from a few millimeters to involvement of a large portion of the heart and entire thickness of the myocardium such as that reported by Peters and Milne.[22] The metastatic tumor may be fairly well delineated or diffusely infiltrating. When small, the tumor may be difficult to distinguish from myocardial scars.[16] On section, the cut edges are whitish-yellow and have a firm consistency.

Microscopic sections show varying grades of differentiation of the glandular epithelium. Three of our cases consisted of well-differentiated adenocarcinoma; one was a mucinous (colloid type) adenocarcinoma.

Clinical Manifestations

Most secondary metastasis to the heart is asymptomatic.[6,10,14,15,35] To Willius and Amberg[38] is attributed the first antemortem diagnosis of metastatic cancer of the heart. Doane and Pressman,[13] Herbut and Maisel,[16] Luisada,[17] Scott and Garvin,[30] and Yater[39] described a clue to the diagnosis of cardiac metastasis consisting of a rather abrupt appearance of progressive signs and symptoms of cardiac disease in a patient with evidence of widespread tumor and without a history of previous heart disease. Frequently, the symptoms are those of congestive failure, pericardial effusion, rhythmic disturbances and syncope.

Birkum and Chulkov gave a detailed account of the anatomo-clinical manifestations of cardiac tumors depending on the size and location of the tumor. According to these authors, a single and small intramural neoplasm either gives no signs or produces a not very distinctive clinical picture. When large and numerous in the myocardium, the patients exhibit severe cardiac distress which may be difficult to distinguish from various non-tumorous diseases of the heart. Severe dyspnea, tachycardia, rhythmic disturbances, enlargement of the cardiac borders and apical systolic murmurs may be observed.

If the tumor is of intracavital localization, a severe general disorder chiefly affecting the cardiovascular system and causing development of insufficiency of heart action is, as a rule, the course pursued. The common manifestations are general debility, dyspnea, cardiac arythmias, cyanosis, edema, and drop of blood pressure. Symptoms of obstruction of the appropriately related valvular foramina, such as the pulmonary artery, is an important consideration. Therapeutic failure should also arouse suspicion of heart tumors.

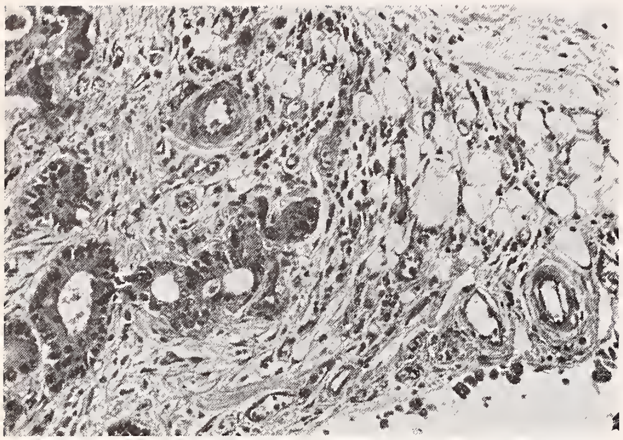
When there are pericardial implants, pericardial effusion may be the chief sign.[15,23] In which case, a pericardial paracentesis and examination of the aspirated fluid for tumor cells may be of value in the antemortem diagnosis.

Electrocardiograms may be normal or abnormal. It is believed to be of occasional value only[14,33] in view of the diversity of the tracings obtained. Patterns of coronary infarction,[27,32] conduction disturbances and arythmias have been reported.

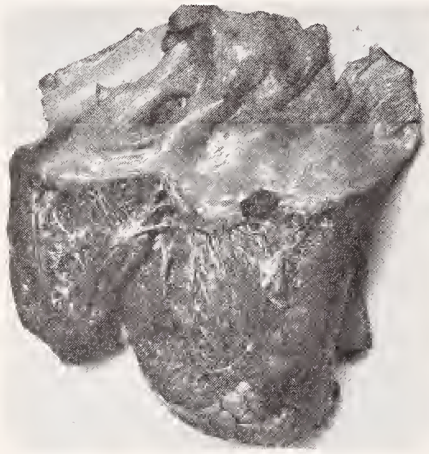
Chest x-rays are also of little diagnostic help. Enlargement of the cardiac silhouette and pericardial effusion are the most important findings.[14]

Report of Cases:

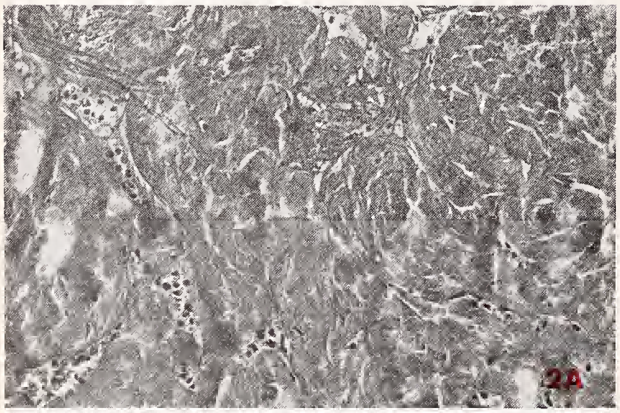
Case 1. H. W., a 71 year-old white female was admitted to Temple University Medical Center on February 22, 1958 with the chief complaint of pain in the rectum of five months duration. Proctologic examination revealed an adenocarcinoma of the low rectum. Pertinent past history revealed that the patient had a right mastectomy for "trauma" in 1944; a left radical mastectomy for cancer in 1954. At operation, there was found gross involvement of the lymph nodes and metastasis to the liver. A palliative abdominoperineal excision of the Miles type was performed. The postoperative course was uneventful and the patient was discharged 23 days following surgery. Two years later, she was readmitted for terminal care and died on

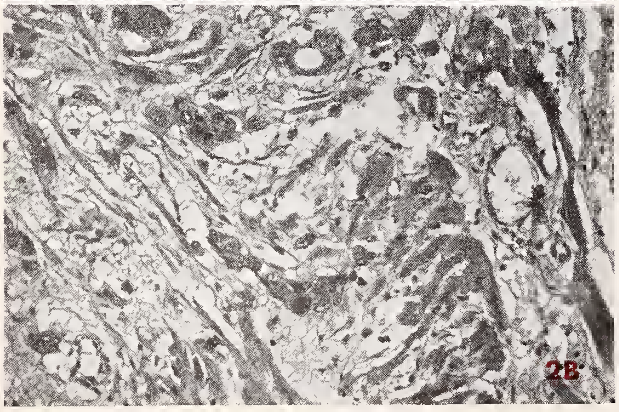


Case 1 — This section demonstrates malignant neoplastic glands invading the subepicardial fat.



Case 2 — On the mitral valve there is a solitary vegetation representing degenerative verrucal endocardiosis.





May 28, 1960. The autopsy revealed widespread metastatic involvement of the ovaries, liver, lungs, pleura, retroperitoneal and mediastinal lymph nodes and heart. The cardiac metastasis consisted of numerous small white nodular implants on the parietal pericardium. Microscopic examination showed neoplastic cells of the tall columnar type forming glandular structures, typical of large bowel primary carcinoma.

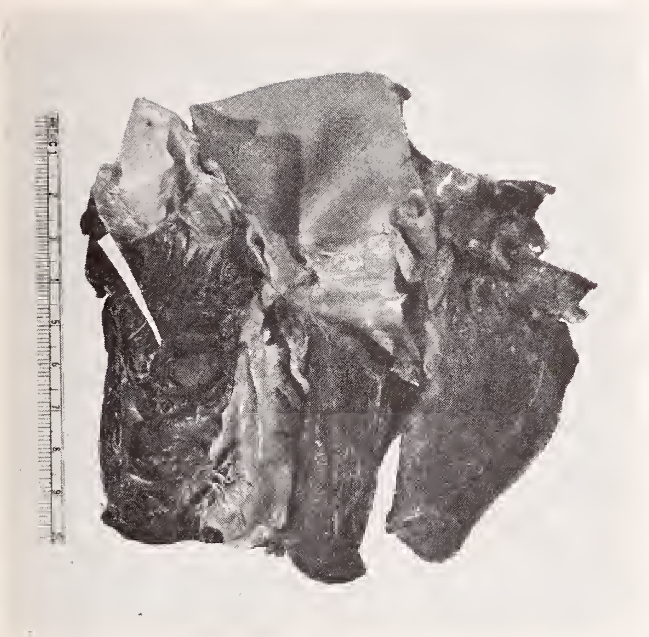
Case 2. C. B., a 47 year-old white female was admitted to St. Luke's Hospital on February 25, 1938. Her chief complaint was abdominal pain and intermittent rectal bleeding of 18 months duration. On physical examination, the pertinent finding was an annular lesion in the lower sigmoid colon. Accordingly, a two-stage Lahey excision of the rectum was performed. Postoperatively, the patient progressed well and the colostomy functioned satisfactorily. Four months later, she was admitted to Temple University Hospital for symptoms of right hydronephrosis which was found to be due to a kidney stone. A right nephrectomy was performed but the symptom of lumbar pain persisted. X-ray of the spine revealed unmistaken evidence of metastasis to the lower dorsal and lumbar spine. Her condition gradually deteriorated and the patient expired on January 10, 1939. There were no cardiac symptoms prior to death. The autopsy findings revealed extensive metastasis to the liver, dorsal and lumbar spine, lungs and heart. The cardiac metastasis consisted of a single nodule containing flecks of yellowish material located in the endocardium of the right ventricle near the middle valvular cusp.

Case 3. M. R., a 47 year-old colored female was admitted to the Philadelphia General Hospital for an adenocarcinoma of the rectum. Accordingly, a first stage Lahey procedure was performed on March 3, 1938. Three months later, the second stage of the procedure was performed. The postoperative period was uneventful. However, a few months later, she developed progressive intractable low back pain and became weak. She expired on May 9, 1939. An autopsy performed at the Temple University Hospital revealed pelvic tumefaction with peritoneal implants of tumor cells measuring to 2 cm. in diameter. There were metastases to the serosa of the stomach, kidneys, left lung, and heart. The cardiac metastasis consisted of a nodule 1.5 cm. in the wall of the right ventricle and another a 0.8 nodule in the interventricular septum.

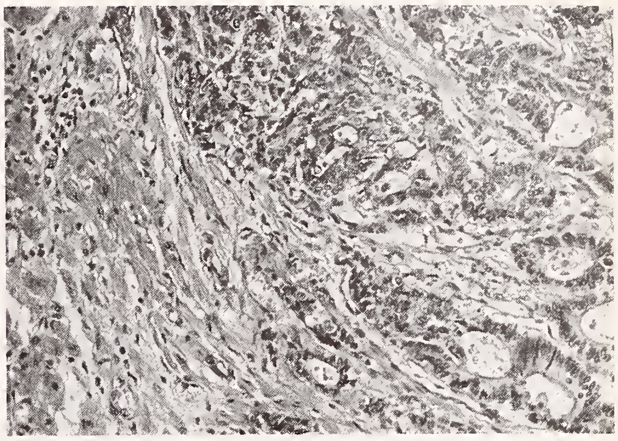
Case 4. E. B., a 53 year-old colored female was admitted to the Philadelphia General Hospital in 1937 with an adenocarcinoma of the rectum. At the time of surgery, exploration of the abdominal organs revealed extensive hepatic metastasis. Accordingly, a palliative Hartmann type of resection was performed. The patient died shortly following surgery. An autopsy was performed and this revealed widespread metastasis involving preaortic nodes, liver, adrenals, lungs, left scapula, brain and heart. Sections of the cardiac metastasis showed glandular epithelium invading the epicardium. similar to the primary in the rectum.

Case 2A — This section shows the amorphous, relatively acellular material making up the verruca. No tumor cells are identified.

Case 2B — This section shows nests and cords of malignant epithelial cells, some of which have a signet-ring appearance, invading heart muscle.



Case 3 — The arrow points to the metastatic nodule manifesting itself on the endocardial aspect of the right ventricle.



Case 4 — Neoplastic glands, some showing secondary daughter acinar formation, invade and replace myocardial fibers.

Comment

It will be noticed that none of the four cases reported herein had been diagnosed antemortem. As a matter of fact, very few cases of cardiac tumors have been diagnosed before death compared to the total number described. In 1954, Gassman et at[14] were able to find only 33 cases and added seven from their own series. Probably, more cases will be diagnosed antemortem if one bears in mind the rather abrupt appearance of cardiac symptoms in the phase of a widespread malignancy in a patient who had no history of heart disease. Obviously, there is no prognostic and therapeutic value in cases of malignant metastasis except for the fact that the case is hopeless and active therapy is bound to be fruitless. However, a definite value is forseen if the lesion is benign in view of its amenability to present day cardiac surgery. The interest of malignancy from the rectum metastasizing to the heart lies in its apparent rarity and academically, on the mechanism of dissemination of the tumor.

Secondary cancerous deposits in the heart are apparently a part and parcel of a generalized hematogenous dissemination. We have not encountered, from previous reports as well as in our cases the situation where metastasis occurred solely to the heart. Other organs are invariably involved such as the liver, lungs, kidneys, adrenals, bones, and brain.

Of the four established pathways of cancer dissemination, namely, direct invasion, implantation, lymphatic and venous invasion, the first two mechanisms are not directly in operation in the subject under discussion. In most cases reported, there is involvement of regional and distant lymph nodes. From here, tumor emboli may drain, by way of the thoracic duct, into the systemic venous circulation. Finally, it may lodge in the right side of the heart or more often, it finds its way into the lungs where they may grow and subsequently invade the pulmonary veins and thus gain access to the left side of the heart and the general circulation. In a recent interesting article by Watne, Moore, Burke, and Sako,[36] they failed to find cancer cells from the lymph obtained from the thoracic duct of patients with terminal colorectal cancer, so that it would seem, the importance of this pathway in widespread dissemination of cancer of the rectum is of lesser import.

Many authors[7,16,18,28,37] believe that direct venous invasion and embolization are the main mechanism of spread of tumor cells from the rectum to the heart. According to Burnett and Shimkin,[10] this hematogenous spread accounts for 90 per cent. Venous invasion has been reported to vary from 15 to 61 per cent of surgical specimens and autopsy cases. Cancer cells have

Table II. Summary of the pathologic findings in four cases of carcinoma of the rectum with metastasis to the heart.

Case No	Autopsy Year	Age	Summary of autopsy findings	Description of Cardiac Metastasis
1	1960	71	There was widespread metastatic involvement of the ovaries, liver, lungs, pluera, retroperitoneal and mediastinal lymph nodes and heart.	The tumor consisted of numerous small white nodular implants on the parietal pericardium. Microscopic examination shows neoplastic cells of the tall columnar type forming glandular structures, typical of large bowel primary carcinoma.
2	1938	47	There were extensive metastases to the liver, dorsal and lumbar spine, lungs and heart.	The metastasis consisted of a single rounded whitish nodule containing flecks of yellowish material located in the endocardium of the right ventricle near the middle valvular cusp.
3	1939	47	Autopsy revealed irregular pelvic tumefaction with pelvic peritoneal implants up to 2 cm. in diameter. Metastatic nodules were found also in the kidneys, left lung, and heart.	The cardiac metastasis consisted of a nodule 1.5 cm. in diameter located in the wall of the right ventricle and another, 0.8 cm. in diameter in the interventricular septum.
4	1937	53	There was widespread metastasis involving the para-aortic nodes, liver, adrenals, lungs, left scapula, brain and heart.	Sections show glandular epithelium similar to the primary in the rectum invading the epicardium.

been demonstrated in 14 per cent in the regional blood and 6 per cent in the peripheral blood of curable rectal cancer.

Thus, viable cancer cells from the primary in the rectum may be transported into the liver by way of the portal system. In the liver, the tumor may find its way into the caval venous system by encroaching on the sinusoids. From here, its fate is similar to that already described.

Metastatic tumor found in the myocardium is probably the result of tumor embolization of the coronary arteries which originate at the base of the aorta. Paradoxical embolization through a septal defect may also be an explanation if the anomaly is present.

Pericardial metastasis is probably brought about by direct invasion or implantation from the secondary pulmonary and pleural metastasis. On the basis of Rouviere's work,[28] Gassman et al speculated that retrograde lymphatic spread, through the left main lymphatic duct which communicates with the anterior mediastinal nodes, might play a role in the mode of metastasis to the pericardium. One of our cases (Case 1) who had mediastinal lymphatic metastasis and tumor in the pericardium might well be explained on this basis, although direct invasion or implantation from the pulmonary and pleural metastases also might have been the explanation.

One of our cases (Case 2) besides showing nodular myocardial metastases also demonstrated degenerative verrucal endocardiosis Table ii. This vegetative lesion while it has been found in patients dying of malignant tumors, has also been reported in acute and chronic diseases of many types. Allen[1] in his masterful analysis and evaluation of this lesion points out that there is possibly a slight tendency for this valvular degenerative change to occur more frequently in patients with malignant neoplastic diseases. This lesion is related to allergy, to vitamin C deficiency or to hemodynamic influences acting on a sclerotic valve.

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THE ANSWER TO WHAT'S YOUR DIAGNOSIS?

From Page 136

At operation petechial hemorrhages were found scattered throughout the entire mesentery of the small gut. Ecchymotic patches were found in the wall of the distal jejunum for a distance of about thirty inches. At this point and distally the intraluminal melena could be identified through the wall of the gut and could be massaged away. The intramural ecchymotic patches could not be wiped away. There was no evidence of ulcer in the stomach or duodenum.

The patient was treated with large doses of Vitamin K and there was no repetition of the bleeding episode.

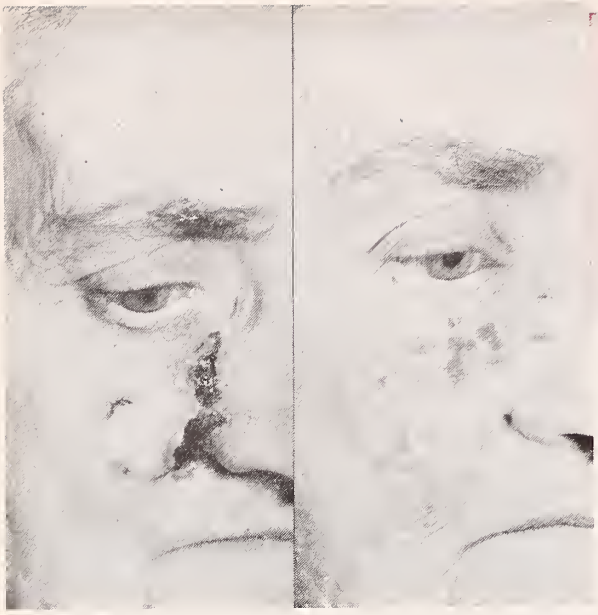

Figure 1.
A. Basal cell carcinoma of the right side of nose and cheek in a 76-year old woman. Irradiation was as follows: H.V.L. 1.4 mm. Al. (100 K.V.P.); F.S.D. 18 cm.; field of 3.5 x 5.5 cm. Total surface dose was 5400 r (4700 rads) within 24 days (18 increments of 300 r (261 rads) each); Total depth dose at 1 cm. was 3780 r (3290 rads). B. Seven years later, there was no evidence of carcinoma. The tissue shows scarring, atrophy, deep pigmentation, telangiectasis and late subcutaneous fibrosis.

The Meaning of Curative

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THE TRUE MEANING of the words "cure" and "palliation" is often obscured by overenthusiasm as well as ignorance, both of which encourage situations wherein a cancer patient is harmed rather than helped by the elected method of treatment.

The definition of "cure" as given by Dorland's medical dictionary is "the successful treatment of a disease or wound." I consider this definition inadequate so far as cancer is concerned. My definition would be "total and permanent eradication of a malignant neoplasm both as to primary and metastatic manifestation." One may rightly contend that such a result would be impossible to prove since even a most careful postmortem examination cannot be complete enough to prove that no cancer cell remains. This leads us to accept the fact that the word "cure" could be used with the reservation that within reasonable doubt and for all practical clinical purposes no cancer cells can be detected by any modern tolerable diagnostic method. It

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Director of Therapeutic Radiology, Roswell Park Memorial Institute, Buffalo, New York.

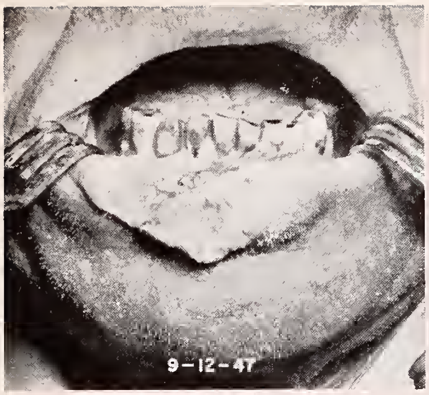
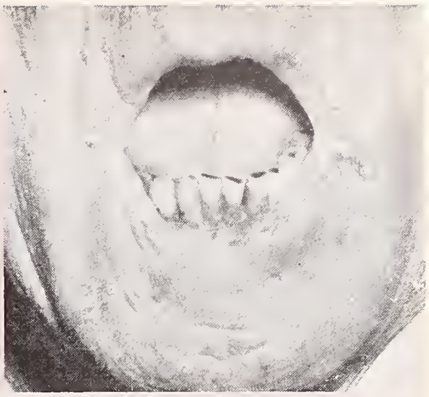


Figure 2

A. Squamous cell carcinoma of one year's duration in a 73 year old man, with metastasis to a left submaxillary lymph node. Irradiation to lip was as follows: H.V.L. 0.5 mm. Cu. (140 K.V.P.); F.S.D. 18 cm.; field of 7 x 4 cm. Total surface dose was 6000 r 5580 rads) within 26 days (12 increments of 500 r (465 rads) each); total depth dose at 1 cm. was 4900 r (4557 rads.)

Irradiation to left submaxillary region was as follows: H.V.L. 0.9 mm. Cu. (200 K.V.P.); F.S.D. 40 cm.; field of 20 sq. cm. (round). Total surface dose was 6000 r (5700 rads) within 32 days (20 increments of 300 r (285 rads) each); total depth dose at 3 cm. was 3850 r (3660 rads).
Four months later, three gold radon seeds of 1.25 mc. each were implanted into the residual nodular induration. Three months later, identical external irradiation was given to an enlarged, hard submental node.



B. Five years after irradiation. The lip tissue is atrophic and scarred; the submaxillary region is scarred. Seven years later, the patient had a carcinoma of the base of the tongue and the epiglottis. Irradiation resulted in complete disappearance of the lesion. His death two years later was due to coronary insufficiency and bronchopneumonia. Autopsy revealed no evidence of cancer.

and Palliative Radiation Therapy

would be better to use the phrase "no evidence of disease — N.E.D." Obviously, enough time must elapse following irradiation before maximum cancerocidal effect has occurred. This usually means a few weeks post-treatment period.

It is customary to associate the word "cure" with a definite time period, e.g. five years, ten years, etc. A patient who first exhibits a recurrence in the sixth post-treatment year obviously was not cured at the five-year stage since the recurrence had to arise from an already existing cancer cell. For some cancers, it has been generally considered "acceptable" to document five year cures if at the end of that period of time following treatment no evidence of the neoplasm was found. This category includes cancers arising in and confined to the skin, lip, oral and pharyngeal structures, larynx, vagina, uterus, female urethra and penis as well as reticulum cell sarcoma of bone, seminoma of the testis and neuroblastoma. Examples are illustrated in Figures 1-5 and Tables 1-3. There are other cancers which, although apparently "cured" at the end of five years or even ten years, have a strong

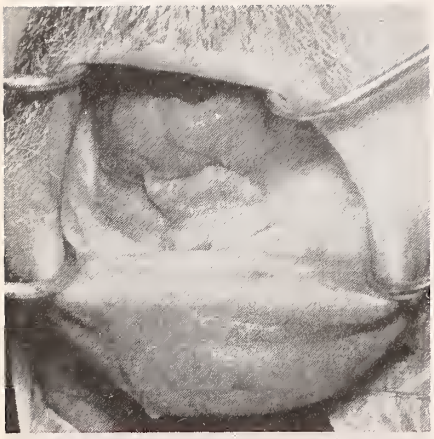
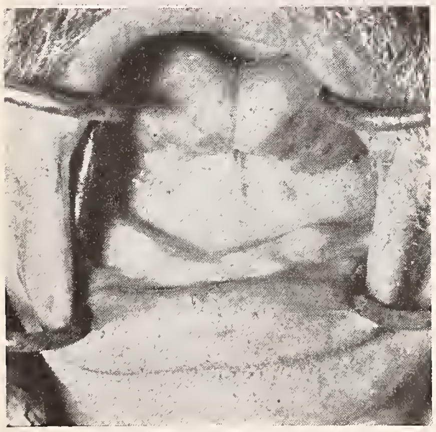


Figure 3

A. Squamous cell carcinoma of the anterior floor of mouth and undersurface of the tongue in a 77 year old man. The tumor was implanted with seven 1.0 mc. gold radon seeds for a dose of about 4000 r (3900 rads). This implant was followed after an interval of 12 days by transoral x-ray therapy as follows: H.V.L. 1.4 mm. Al. (100 K.V.P.) F.S.D. 37 cm.; field of 10 sq. cm. (round). Total surface dose was 7500 r (6525 rads) within 19 days (15 increments of 500 r (435 rads) each); total depth dose at 1 cm. was 5240 r (4560 rads).

B. Eight years later. The site of treatment was smooth with only slight evidence of scarring and fibrosis. The patient has had no recurrence of his cancer for over eight years.



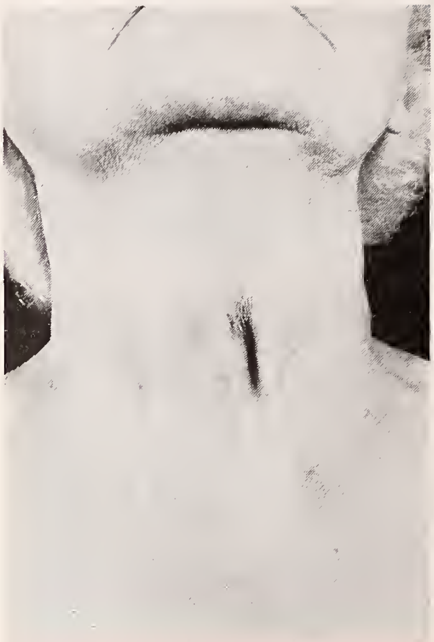


Figure 4

Minimal late skin changes six years after irradiation of the neck for a large anaplastic carcinoma involving the right vallecula, epiglottis, aryepiglottic folds and vocal cords in a 67 year old lady. An emergency tracheotomy was performed before treatment. Factors used were: H.V.L. 5.0 mm. Cu. (400 K.V.P.); F.S.D. 50 cm.; Fields — right and left neck — 10 x 10 cm.; Total center depth dose 6100 r (5917 rads) within 46 days; Total surface dose — 6170 r (5985 rads). Surface increment dose technic to two fields daily was as follows: 100 r (97 rads) for eight cycles, 125 r (121 rads) for five cycles, 150 r (146 rads) for 17 cycles. Her present condition eight years after irradiation is excellent.

tendency to recur either at the primary site or at distant points. The most notable example in this category is cancer of the breast (Figure 6).

Statistics representing end results (Table 1) should note (1) the total number of patients examined as well as treated and the reasons for not treating, (2) the number alive with cancer, (3) the number who died due to cancer, (4) the number who died of other reasons and (5) the number of patients who were lost to follow-up.

Cutler et al[2] presented data on 9121 breast cancer patients from Connecticut which clearly demonstrated that survival for five years with or

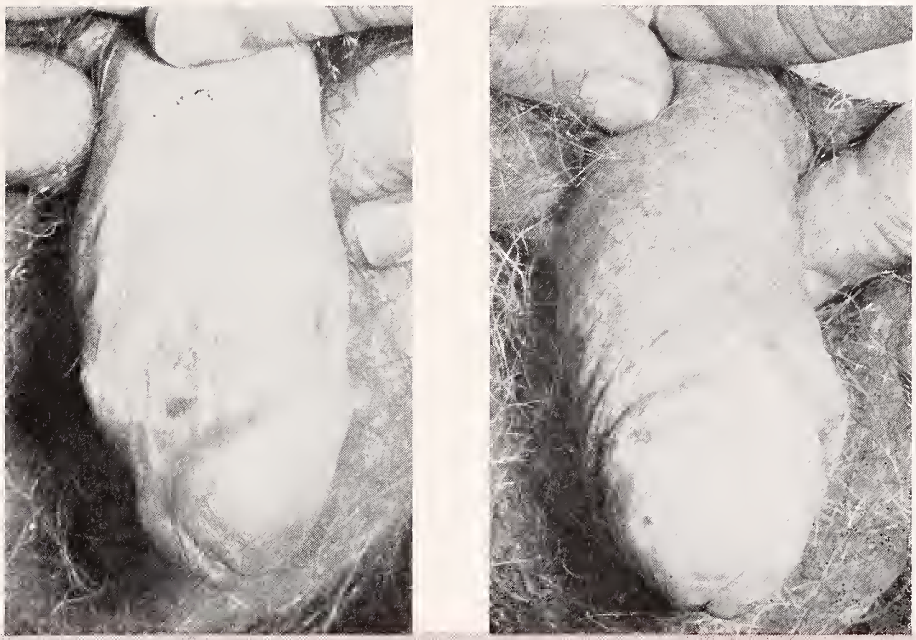


Figure 5

A. This 61 year old patient with a squamous cell carcinoma of the glans and corona of the penis was irradiated with a cylindrical radium wax mold applicator following refusal of amputation. A total peak dose of 5500 rads and a center-of-penis dose of 4750 rads were given in eight applications within eight days.

B. Over five years later, there was no evidence of carcinoma and patient reported "excellent function."

without disease does not necessarily mean that the excess mortality risk due to cancer has been eliminated for the remaining members of a patient sample. Their data indicated that mortality due to cancer of the breast may continue to be "above normal" for an appreciable period beyond five years. The five and ten year survivals in an original group of patients were 46% and 29% respectively. If mortality during the sixth to tenth years had been reduced to the level observed for the general population, 38% instead of 29% of the original sample would have survived ten years. In other words, the Connecticut statistics show that 63% of the breast cancer patients alive at the end of five years eventually survive ten years in contrast to an expected 83% of the general population in the same age group.

The survival curves for patients with carcinoma of the breast or cervix at Roswell Park

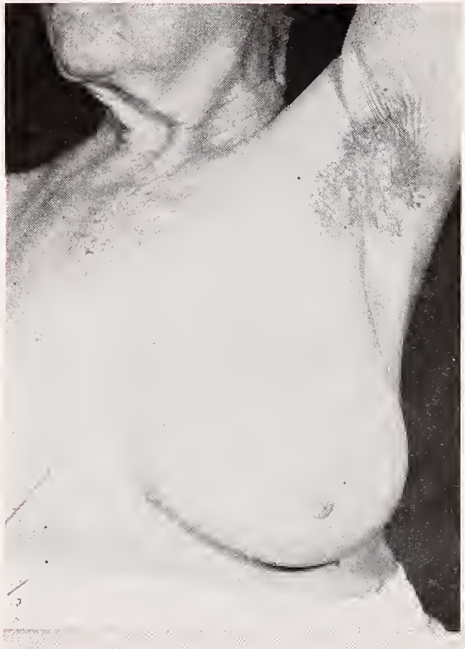


Figure 6

Appearance of the skin ten years after irradiation (H.V.L. 0.9 mm. Cu.) of parasternal metastases (large tumor mass) and 17 years after irradiation (H.V.L. 0.9 mm. Cu.) of the left breast and axilla-supraclavicular region for an upper medial quadrant carcinoma (3 x 4 cm.) and 13 years after reirradiation of the left axilla. The patient was 61 years old when first irradiated. She had refused surgery.

TABLE 1

CARCINOMA OF THE CERVIX UTERI
RELATIVE FIVE YEAR END RESULTS 1945-1952
(ROSWELL PARK MEMORIAL INSTITUTE)

	Stage I	Stage II	Stage III	Stage IV	Total
No. Patients Treated	326	429	372	117	1244
No evidence of carcinoma	74.8%	54.7%	35.5%	18.8%	50.8%

Examined but not treated—52 (4%): 15 because of extent of disease, 5 because of death, 11 sought treatment elsewhere, 21 refused treatment.

Alive with carcinoma—13

Died of carcinoma—501

Died of other causes—85

Lost trace of—12

(From Murphy, W. T. RADIATION THERAPY. Philadelphia, W. B. Saunders, 1959)

TABLE 2

PRIMARY CANCER OF THE VAGINA
ROSWELL PARK MEMORIAL INSTITUTE
FIVE YEAR END RESULT 1940-1949

	STAGE	Number of Patients	Died of other cause before five years	Died of Cancer	No evidence of cancer after five years	
					Number	Per Cent
	I	13	3 (av. 3 yr.)	1	9	69.2
	II	13	0	10	3	23.0
	III	2	0	2	0	0
Total	I+II+III	28	3	13	12	42.9
	I+II	26	3	11	12	46.2

Stage I The lesion is limited to the vagina or the immediate paravaginal tissue. It may secondarily involve the face of the cervix, but not the columnar-squamous epithelial junction.

Stage II The lesion (a) has extended beyond the immediate paravaginal tissues, (b) has invaded either the urethra, bladder, rectum or vulva, or (c) has metastasized to the regional lymph nodes or outside the pelvis, etc.

Stage III The lesion has had definitive treatment before the patient was admitted to this Institute.

(From Murphy, W. T., RADIATION THERAPY, Philadelphia, W. B. Saunders, 1959)

Memorial Institute are shown in Figure 7. The breast patients were treated by a variety of methods whereas practically all of the cervix patients were irradiated. These life expectancy curves (life table technic) represent the eventual ten year survival percentages of patients who have survived five years after diagnosis. The ten year figure for breast is comparable to that reported by Cutler et al and the ten year figure for cervix is comparable to the expected survival figure for the general population in the same age group as given by Cutler et al. The greater attrition rate of patients with breast cancer is clearly evident. Figure 8 represents the percentage of determinate patients who die from the fifth year on and who have cancer present. This does not indicate that the cancer was the actual cause of death although in the majority of instances it can be presumed to be. The excursion in any one line is due to the small samples. About the same percentage of breast and cervix cancer patients who die at the tenth year have cancer present (albeit a greater percentage of breast cancer patients have failed to survive even the five-year point). The skin and lip cancer patients at death have a relatively low incidence of "cancer present." These patients are in an older age group at diagnosis and rarely die due to the presence of cancer of the skin or lip. Many of the skin cancer patients have multiple primary skin cancers appearing over a period of many years.

Cure

The actual curative value of radiation therapy depends upon many factors.

a. Natural biologic behavior or predeterminism of the cancer and the histologic type.

This means that some cancers have a tendency to metastasize while still clinically small and apparently confined to the tissue of origin. This may be due to the relative amount of lymphatic tissue at the site of origin, to functional motion of the tissue of origin, to a peculiar invasive tendency of the malignant cells or in other words to a lack of so-called host resistance to the spread of the cancer. It may also involve relative differences in the responsiveness of the malignant cell to irradiation. This not only holds true for cells of different species or tissue origin but for cells in one primary or metastatic colony. While the tissue bed has some influence upon the radiosensitivity it is well known that certain cellular types are more sensitive than others. This is illustrated by the comparative radioresponsiveness of (1) reticulum cell sarcoma of bone over osteogenic sarcoma, (2) seminoma of the testis over embryonal cell carcinoma of the testis, (3) dysgerminoma of the ovary over cystadenocarcinoma of the ovary (4) medulloblastoma over astrocytoma.

Here it may be said that often but not always the sensitivity of the cancer is inversely proportional to the degree of differentiation, the more embryonal the cell type, the greater may be its radiosensitivity. The degree of differentiation plays a more important prognostic role in patients with adenocarcinoma of the uterine corpus than in patients with squamous cell carcinoma of the cervix. In patients with uterine corpus adenocarcinoma, the more differentiated neoplasms tend to have less myometrial invasion and hence lend themselves better to intracavitary irradiation combined with post-radiation hysterectomy, thus resulting in higher control rates. I have not observed any relevant correlation between the degree of differentiation and the results of irradiation in patients with carcinoma of the cervix. In patients with carcinoma of the nasopharynx, those with the anaplastic type generally do better than those with the differentiated type.

Metastases are very often not clinically apparent at the time the patient is first irradiated. The eventual irradiation failure may be due to the disseminated disease and not due to lack of control of the primary lesion. In patients with poor host reaction, there may be a failure to control even the primary lesion.

Other examples of high and low rated radiocurable cancers are as follows: basal carcinoma of the skin versus melanocarcinoma of the skin, carcinoma of the lip versus carcinoma of the tongue, carcinoma of the cervix with a vaginal smear demonstrating good SR, high histiocyte and high cancer cell desquamation counts versus one of equal clinical stage but with poor SR and low histiocyte and low cancer desquamation counts in the vaginal smear.

f. Site of lesion.

Accessibility is very important in delivering

TABLE 3
CARCINOMA OF THE CERVIX
Roswell Park Memorial Institute 1942-1953

STAGE	200 KVP (HVL 0.9 mm. Cu.)	250 KVP (HVL 2.5 mm. Cu.)	400 KVP (HVL 5.0 mm. Cu.)	1000 KVP (HVL 9.0 mm. Cu.)
II	53% 41/78	44% 10/23	60% 55/92	57% 52/91
III	29% 14/48	52% 11/21	39% 47/119	42% 44/105
IV	15% 2/13	20% 1/5	24% 8/33	24% 8/33
TOTAL	41% 57/139	45% 22/49	45% 110/244	45% 104/229

Five year no evidence of disease (NED) rates for patients with carcinoma of the cervix (Stages II, III and IV) who were irradiated by a converging x-ray field technic combined with intracavitary radium applicator. To be eligible for comparison each patient had to have a minimal exposure dose to Points A and B of 6000 r and 3500 r respectively (plotted or estimated combined dose from x-ray and radium). Although these patients were not randomized and some of those treated by 400 KVP and 1000 KVP generators were larger in dimensions, the results illustrate what end results are possible with so-called conventional radiation sources when individualized and well planned technics are used.

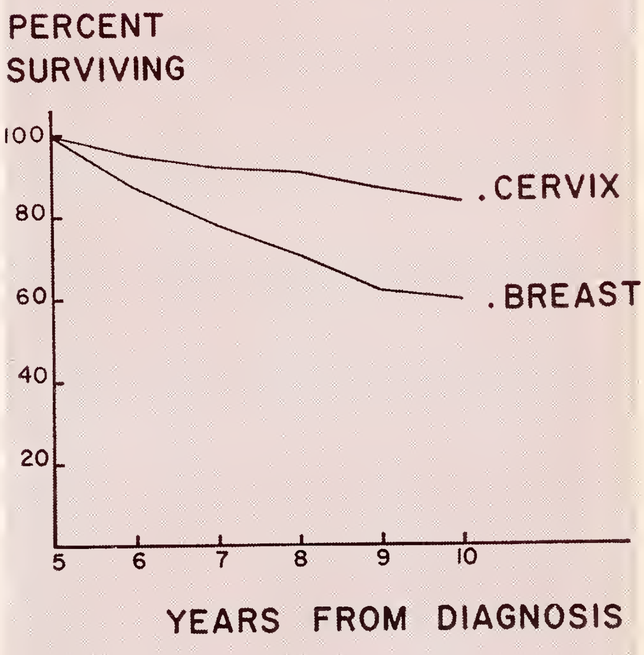


Figure 7
Life expectancy curves for patients with cancer of the breast or cervix who have survived five years from diagnosis (life table technic). Patients were first treated at Roswell Park Memorial Institute during the years 1945-1955.

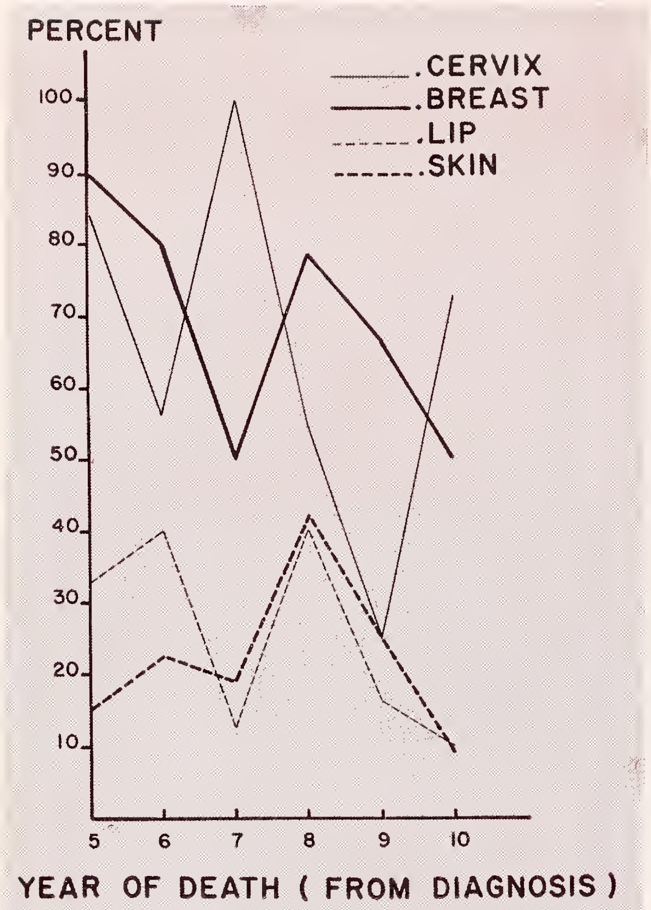


Figure 8

Percentage of determinate cases with cancer of the breast, cervix, skin or lip who die from the fifth year on and who are known to have cancer present at the time of death. Curves are based upon life table technic. Patients were first treated at Roswell Park Memorial Institute during the years 1945-1955.

adequate irradiation. It is known that a few millimeters difference in location may alter the curability rate, not only because of the difference in accessibility but because of a change in the type of tissue bed and/or lymphatic drainage characteristics. This is apparent in the following comparisons of favorable versus unfavorable lesions. Squamous cell carcinoma of the preauricular skin versus a squamous cell carcinoma of the skin of the external auditory canal, a carcinoma of the middle third of a freely movable vocal cord versus one arising at the posterior commissure, a carcinoma of the medial canthus versus one arising in the ethmoid sinus, adenocarcinoma confined to the corpus uteri versus one extending to the endocervix. Some carcinomas, such as found in the ovary, lack anatomical barriets to early expansion and spread.

The relative expendability of the structure would influence the decision of irradiation. For example, a carcinoma of the labium major arising in an atrophic skin would be more amenable to surgery since such tissue does not tolerate irradiation too well and is expendable without interference with more vital structures. However, a carcinoma of the distal vagina would be better managed by irradiation since adequate surgery would compromise both the lower alimentary and urinary tracts. A carcinoma of the breast is better managed by surgery since the breast tissue does not tolerate cancerocidal irradiation well and if the patient has an "operable" lesion, surgery would be more definitive in its ability to give lasting control.

a. Size of the Primary Tumor.

It is possible to give more tolerable cancerocidal irradiation to a small lesion than to a large one. This not only holds true for interstitial and intracavitary methods but also for teleradiation technics. Examples of this principle follow: A 3 square centimeter basal cell carcinoma of the forehead versus one measuring 50 square centimeters, carcinoma of the lateral anterior edge of the tongue measuring 1 cm. in diameter versus one measuring 4 cm. in length extending along the lateral edge, a carcinoma limited to the uvula versus one involving most of the soft palate, a carcinoma on the posterior pharyngeal wall at the level of the uvula measuring 1 cm. in diameter versus one about 5 cm. in length extending down to the laryngopharynx, a carcinoma of the anus situated at one side of the external orifice versus one that involves more than one half of the circumference of the anus.

b. Degree of contiguous spread/or regional metastasis.

Generally, the "cure" rate will be inversely proportional to the degree of extension to neighboring organs or lymphatic nodes. In most cancers, such findings signify a bad prognosis. However, there are cancers which in spite of extension do demonstrate surprisingly good control rates with radiation therapy. The most impressive example of this is carcinoma of the cervix uteri. The anatomical characteristics of the pelvic organs and lymphatic structures favor the uterus for successful irradiation both from intracavitary as well as from external sources. Patients with

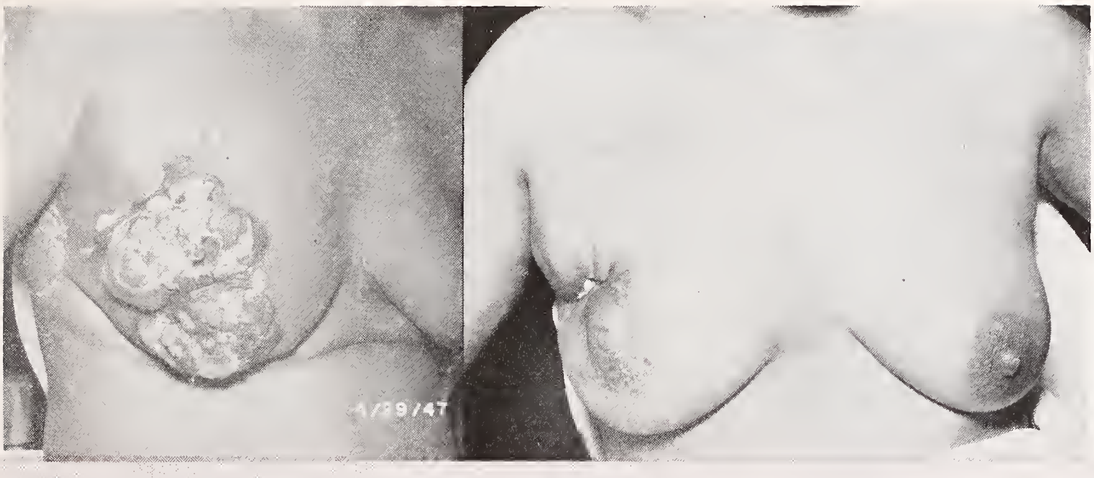


Figure 9

This case illustrates the palliative effect of radiation therapy.

A. A large, fungating carcinoma of the breast in a 45 year old woman with widely scattered satellite skin nodules and bilateral axilla-supraclavicular metastases. Treatment for palliation was as follows: H.V.L. 0.9 mm. Cu. (200 KVP); F.S.D. 50 cm.; fields — medial and lateral tangential breast ports — 15 x 20 cm. Total central breast depth dose was 4800 r (4560 rads) within 46 days. The patient did not keep her appointments punctually. She received 300 r (285 rads) to alternate fields for ten cycles.

B. Appearance of the breast region five months after completion of irradiation. The patient's death eight months after this date was due to diffuse metastases.

many other types of lesions occasionally have had their neoplasms permanently arrested by irradiation in spite of regional metastasis and/or extension to neighboring structures, e.g. patients with carcinoma of the tonsil, nasopharynx, palate, gingiva, buccal surface, larynx, laryngo-pharynx, vagina and female urethra.

Palliation

Palliation is defined by Dorland's dictionary as "relief, but not cure." It is most imperative that excellent judgment be exercised in selecting patients for irradiation. Although palliative irradiation is a legitimate and often successful form of management, one should certainly avoid causing distress from irradiation effects when there is no reasonable hope of helping the patient. The expectation of relief should be equal to or beyond that possible from other palliative measures. Prolonging life without symptomatic relief cannot be termed palliation. This point is very often overlooked in our enthusiasm to do something for a patient. Many times, family doctors or referring specialists will press the radiotherapist to give "some treatment" when better judgment dictates that the irradiation will most likely make the patient worse. For example, irradiation is certainly not indicated in a patient with an extensive esophageal carcinoma with supraclavicular metastasis after an esophagostomy and gastrostomy have been performed. In such a situation, palliation has already been given by surgery. Irradiation would add nothing significant to the result and might only create mediastinal or pulmonary complications in a patient already made relatively comfortable.

Irradiation for palliation should be given when, within reasonable doubt, it appears probable that one can (1) relieve pain e.g. bone metastases from carcinomas arising in the breast, lung, thyroid, cervix, urinary bladder and kidney as well as infiltrating soft tissue tumors such as are occasionally found in patients with lymphoma and leukemia, (2) relieve obstruction e.g. common or hepatic bile duct obstruction due to lymphoma, bronchial obstruction due to bronchogenic carcinoma, esophageal obstruction due to esophageal carcinoma or metastatic mediastinal lymphadenopathy, ureteral obstruction due to retroperitoneal lymphoma, superior vena cava obstruction due to bronchogenic carcinoma or

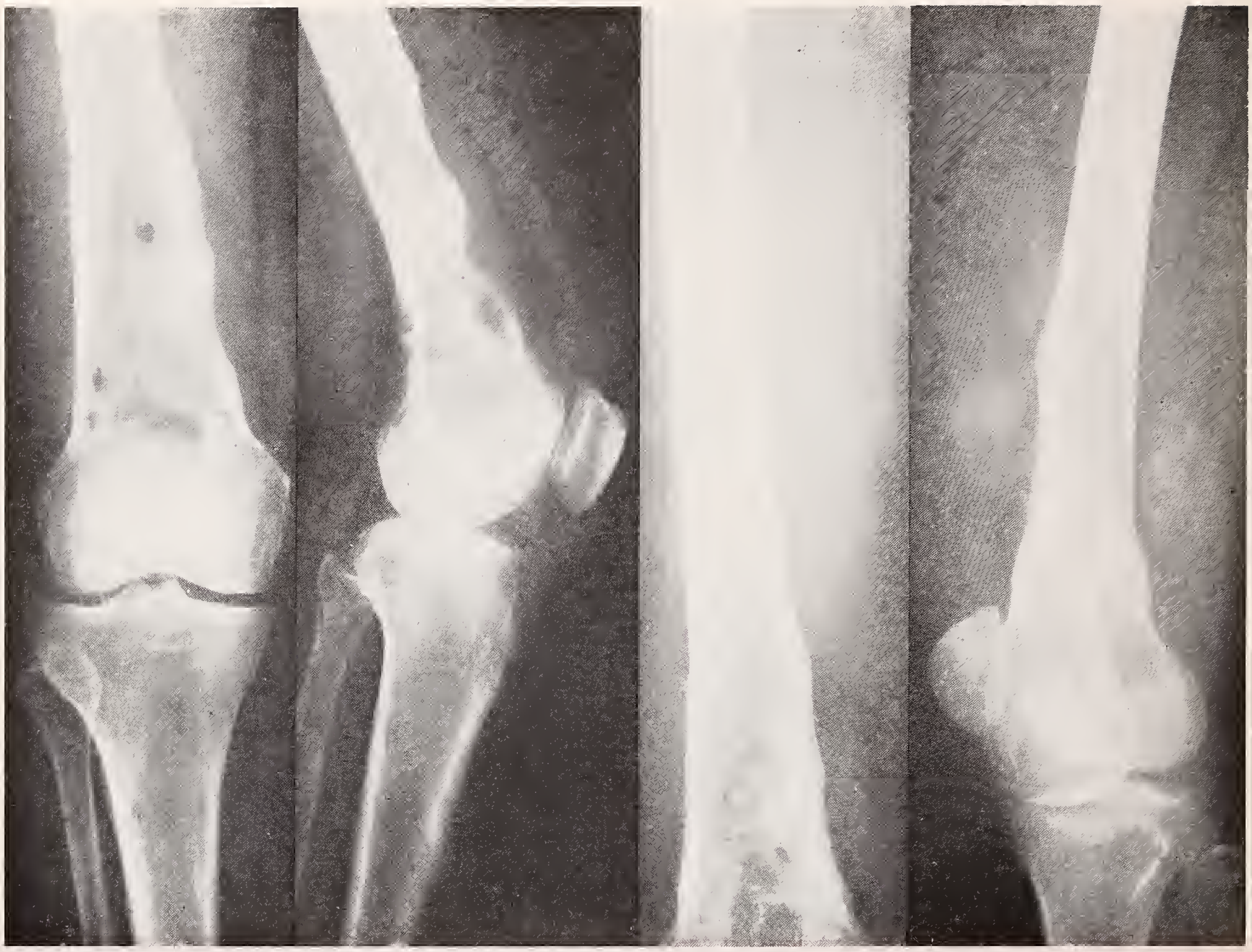


Figure 10

A & B Metastases to the lower femur from breast carcinoma in a 59 year old woman. This region was irradiated as follows: H.V.L. 9.0 mm. Cu. (1 M.v.p.); F.S.D. 70 cm.; fields — anterior and posterior — 10 x 20 cm. Total surface dose was 4288 r (4159 rads) to each field (400 r (388 rads) to one alternate field daily for eight cycles); total depth dose in bone was 4480 r (4346 rads soft tissue dose and 4085 rads bone tissue dose). The total time period was 23 days. C & D. Two years after irradiation (no hormone therapy). The patient had an excellent regeneration which allowed weight-bearing. She died seven years after irradiation because of disseminated disease, but without clinical activation in the illustrated femoral site.

mediastinal lymphomas), (3) stop or reduce hemorrhage (e.g. extensive carcinoma of the urinary bladder and uterus), (4) promote healing of ulcerative lesions (e.g. extensive carcinoma of the skin, upper respiratory-alimentary tract, breast, urinary bladder, vagina, uterus and esophagus), (5) ameliorate cough and dyspnea (e.g. bronchogenic carcinoma or in patients with lymphomas, testicular seminoma or ovarian dysgerminoma involving lung and/or mediastinum), (6) promote the repair of pathologic fractures (e.g. metastatic carcinoma from the breast, urinary bladder and thyroid as well as lymphomas and certain primary bone tumors), (7) reduce the formation of serous or chylous effusions due to cancer (e.g. pleural effusion due to mediastinal or pulmonary-pleural lymphomas or carcinomas, ascites due to ovarian carcinoma), (8) afford mental relief to the patient. I have seen patients derive great psychological benefit from the shrinkage of a visible tumor mass that was more or less asymptomatic, even though I knew that there was disseminated disease, (9) delay the spread of cancer (e.g. carcinoma of the breast, anaplastic carcinomas of the oral cavity and pharynx, certain lymphomatous tumefactions, ovarian carcinoma, Ewing's sarcoma and osteogenic sarcoma). Figures 6 and 9-13 illustrate palliative results with irradiation.

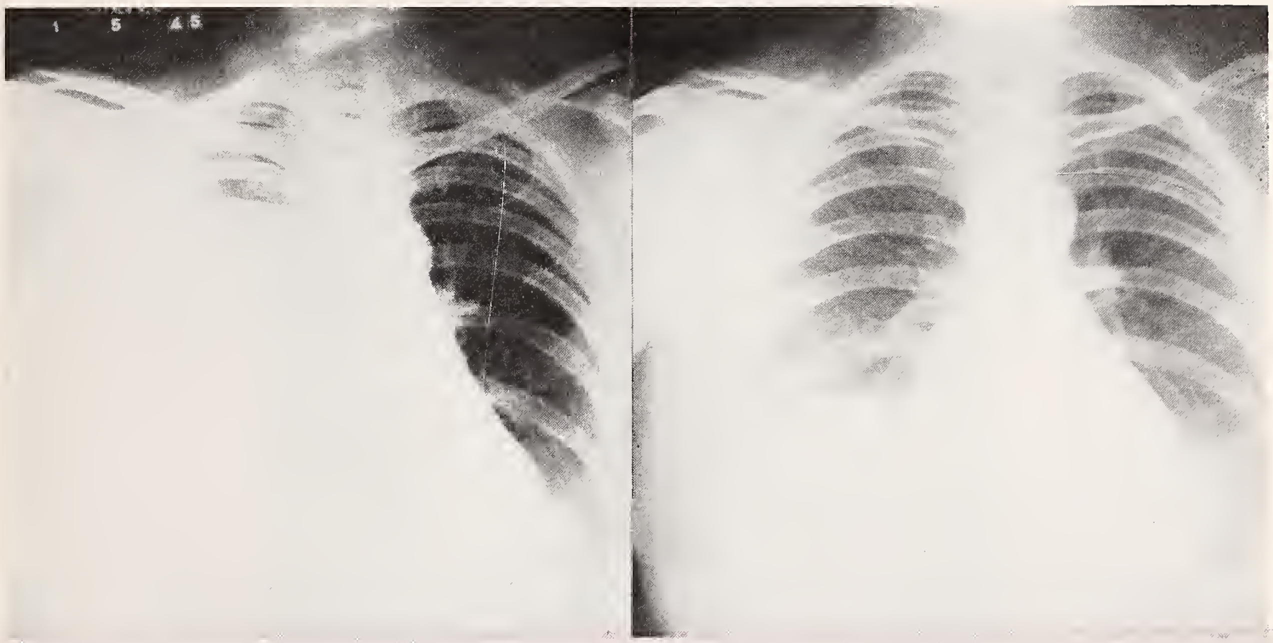


Figure 11

A. Massive pleural effusion in a 47 year old woman with Hodgkin's disease. A total center depth dose of 1800 r (1710 rads) was given within 34 days with H.V.L. 0.9 mm. Cu. (200 K.V.P.) at F.S.D. 80 cm. through anterior and posterior 15 x 15 cm. fields. Alternate skin fields received 200 r (190 rads) per day for 14 cycles. The correction factor for a changing thoracic density would be rather difficult to determine. In this patient, an increase of 10 per cent over the unit density phantom values could be used.

B. On the last day of treatment, the chest appeared almost normal. The patient died of her disease seven years later. She had had no further trouble with this chest region.

The referring physician should never tell a patient categorically that he will receive irradiation, let alone the type, number of treatments, etc. He should state that he is referring the patient for consultation regarding possible irradiation. The decision to irradiate should be made by the radiotherapist only after a physical examination of the patient and all pertinent clinical and laboratory information have been obtained. In many instances, it is better for the referring physician and the radiotherapist to withhold from the patient any decision regarding irradiation until both have conferred and settled upon a course of action. Certainly if irradiation is to be a part of the management of a cancer patient, all parties concerned should map out the program before any definitive treatment, e.g. surgery, is given.

The radiotherapist must decide whether cure or palliation is possible. This is not always an easy decision to make and there is not always a definite distinction between curative and palliative technics. Many patients may appear to be beyond a possible "cure" yet will respond so favorably to irradiation that a long apparently cancer-free survival results. Palliative irradiation should always receive the same careful planning and meticulous execution that is demanded of curative irradiation. All technical factors including radiation quality, number, site, size and angulation of fields and time-dose relationship should be individualized. While the availability of highly energizing radiation is important in the adequate and safe irradiation of deep-seated or bone-shielded cancers, the skill and conscientious efforts of the radiotherapist are generally more important than the limitations in his radiotherapy equipment. However, there is really no valid excuse for not having the proper tools available wherever cancer patients are accepted for treatment. If neither cure or palliation appears to be possible, no irradiation should be given.

One should take the time to evaluate the patient and to correct as many deficiencies as possible before starting irradiation. Cantril[3] stated that many so-called irradiation complications are really those of the cancer which were

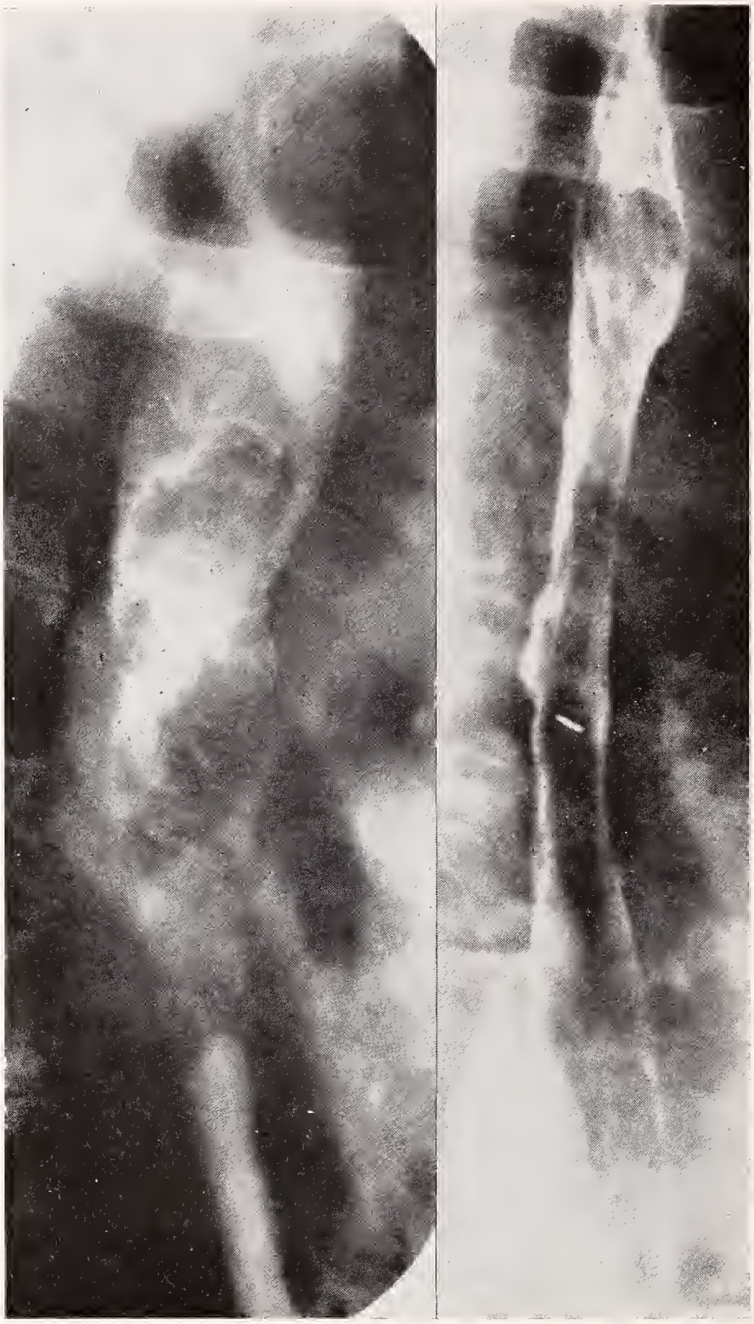


Figure 12

A. Squamous cell carcinoma of the mid-esophagus. This roentgenogram was made before exploratory surgery, at which time the lesion was deemed inoperable because of mediastinal metastases. Silver clips define the extent of the gross tumor. Irradiation was as follows: H.V.L. 7.6 mm. Pb (2M.V.P.); F.A.D. 100 cm.; Field (rotation) of 8 x 15 cm. Total tumor dose was 5950 r (5772 rads) within 43 days (31 treatments). Because of relatively lower lung density, this unit density value dose would be increased by 20 per cent — 7150 r (6936 rads).

B. Five months after treatment the barium pattern is more nearly normal. The patient was able to swallow well for one year, when he died of complications.

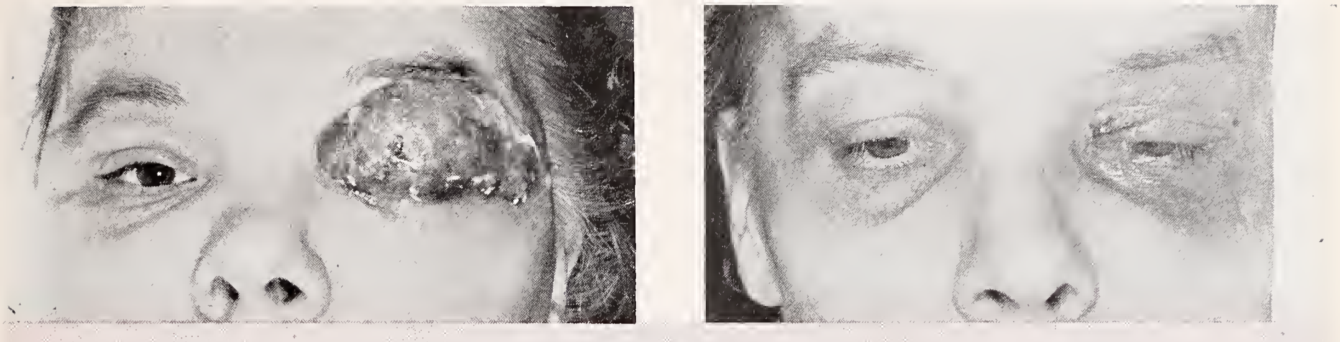


Figure 13

A. This 40 year old woman had acute myeloblastic leukemia. The orbital region was irradiated as follows: H.V.L. 0.9 mm. Cu. (200 KVP); F.S.D. 25 cm.; field of 6 x 10 cm. Two 50 r (48 rads) and one 200 r (190 rads) increments were given on successive days, followed after a one week interval by another increment of 200 r (190 rads). B. One week after the last treatment. The patient died of her disease one month later.

present at the outset of treatment and unrecognized.

Supportive Treatment

Operations such as antrotomy, tracheotomy, gastrotomy, the transurethral resection of a prostatic gland, urinary diversion, drainage of pyometria, or the removal or drainage of a tubal abscess may be indicated before starting irradiation. Specific antibiotic medications, transfusions and general supportive care, if given early and adequately will increase the patient's chances of responding favorably to irradiation.

Placebo Treatment

A radiotherapist is occasionally asked to give a patient with advanced cancer a "placebo" treatment. This means that the patient should be placed impressively under the x-ray tube for a few minutes or seconds but without energizing the tube or opening the shutter. Some may receive token amounts of a few rads. The purpose is to raise the morale of the patient who would then expect improvement or "cure" during the days or months to follow. This practice while undoubtedly affording the patient a variable amount of psychological benefit, definitely prostitutes the practice of radiation therapy. The family and friends of the patient recount the fact that radiation therapy had been given with, of course, a subsequent fatality! All referring physicians should cease such practice. Please do not "press" the radiotherapist to apply irradiation for such a reason. If you insist on giving placebo therapy, use some method associated with your own armamentarium, e.g. sterile water under the disguise of chemotherapy, etc.

Clinical Results

The clinical result of irradiation should be judged not only by the completeness of the cancer cell disintegration but also by the minimal amount of tissue change in the stroma and hence the functional and cosmetic result. One can readily understand that the location of the tumor, its biologic behavior (predeterminism) or the tumor-host relationship are usually of more practical importance than the lesion's relative radiosensitivity. Here, I would like to emphasize that the failure to cure an accessible primary malignant tumor is more often due to errors in radiotherapeutic technique than to so-called "radioresistance." There are clinical situations where it would be possible to eradicate a cancer but only at the expense of death or excessive morbidity. The surgeon faces comparable situations where it is questionable whether the result is justified due to social ostracism of the patient as well as the extreme psychologic and physiologic invalidism which can be produced.

Conclusions

In conclusion, may I state that many patients with cancer have been truly cured by irradiation. Many have been definitely palliated. There have been others who have been harmed by irradiation either through ignorance or poor judgment sometimes camouflaged by the overenthusiasm of the radiotherapist or incited by the pressure of the referring physician who wanted something done for the patient. Occasionally, the best intended, directed and executed procedure will fail to cure or palliate. It should be understood that radiation therapy is a major undertaking and deserves all the careful selection, thought and preparation demanded by major surgical and medical procedures. Those responsible for the direction and implementation of the radiation therapeutic instruments and sources should be well trained and dedicated to the specialty of radiation therapy. The true meaning of the words "cure" and "palliation" should never be forgotten either in our daily administration of treatment or in our documentations.

Acknowledgement

I am indebted to Dr. Irwin Bross, Chief Biostatistician at the Roswell Park Memorial Institute, for his assistance in compiling the statistical data used in this paper.

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DIARRHEA IN CHILDREN

Farchione studied 153 children with various diarrheal diseases using a new intestinal motility inhibitor, thihexinol methylbromide, and found that this drug was well tolerated.

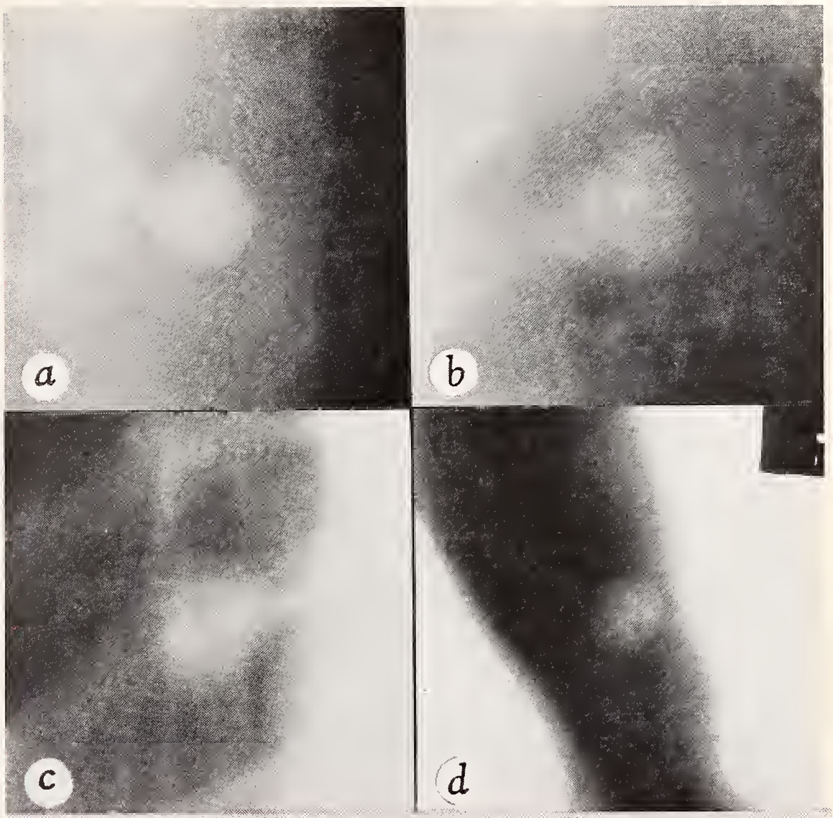
Some patients had been treated with kaolin-pectin suspension but were given thihexinol when it was apparent that the kaolin-pectin suspension was ineffective. Excellent results were obtained in 80 per cent. Mild flushing of the skin was observed in 4 per cent of the patients. This was a transitory phenomenon.

What we need is not the will to believe, but the wish to find out, which is the exact opposite.—*Bertrand Russell.*

The whole life of man is but a point of time; let us enjoy it, therefore, while it lasts, and not spend it to no purpose.—*Plutarch.*

False words are not only evil in themselves, but they infect the soul with evil.—*Socrates*

Roentgenologic Appraisal of Solitary Pulmonary Nodules



Patterns of calcium deposition in solitary pulmonary nodules: **a.** Small central nidus. **b.** Multiple punctate foci. **c.** Laminated appearance. **d.** Popcornball appearance.

Apparently innocuous, silent and solitary pulmonary nodules turned out to be malignant between 25 and 44% of the time during this extensive study. The author tells you how to protect your patient with the proper procedure to accurately evaluate these lesions. Here is your best chance to cure your patient. You must be willing to recommend thoracotomy to solve many of these problems. This is a timely report of great value for all of us.

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BY DEFINITION, a solitary pulmonary nodule is a mass situated in the substance of a lung in which there is no evidence of other significant disease. Experience shows that some of these nodules are malignant; the percent that are malignant varies according to the segment of the population examined and to the restrictions placed on the selection of cases. The incidence of malignancy is greater with age, with the size of the nodule and in the presence of symptoms; it is less in the female sex and in the presence of roentgenologically demonstrable calcification of the mass. Nevertheless, the incidence of malignancy is sufficiently great that most authorities

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The Russell D. Carman Memorial Lecture, sponsored by the Minnesota Radiological Society, presented May 22, 1961, at the meeting of the Minnesota State Medical Association, Saint Paul, Minnesota.

Section of Roentgenology, Mayo Clinic and Mayo Foundation, Rochester, Minnesota.

agree that surgical exploration is justified in any individual case unless overwhelming evidence can be elicited that the lesion is benign.

There are many reports in the literature dealing with the nature of these nodules. The incidence of malignancy given in these reports varies from 17 to 78 percent. Two groups of cases studied at the Mayo Clinic may be cited to show why such a variation exists.

One group consisted of 340 cases, collected over a 15-year period, in which the pulmonary nodule was excised and examined microscopically. Forty-four percent of these masses were malignant, including 88 primary carcinomas, 22 bronchial adenomas and 41 metastatic neoplasms. (Adenomas are included among the malignant lesions because metastasis occurs in 10 percent of cases.)

The other group was composed of 705 cases, collected in a 3½-year period, in which the presence of a nodule was discovered in the roentgenogram of the chest made as a part of a general physical examination. Twenty-five percent of these masses proved to be malignant, there being 81 primary carcinomas, 10 adenomas and 87 metastatic neoplasms.

In the first group, the incidence of malignancy probably is high because the cases were those selected for exploratory thoracotomy. In the second group, the incidence probably is low because only those cases were included as malignant in which the diagnosis was confirmed by microscopic examination of sputum or of tissue taken from the nodule or from a metastatic focus. No doubt some of the patients who were not operated on and who were subsequently lost to follow-up also had malignant nodules.

It can be said, therefore, that at the Mayo Clinic where many patients are adults in that period of life known as the "cancer age," between 25 and 44 percent of solitary pulmonary nodules are malignant, that the true figure probably lies between these two extremes.

Exploratory thoracotomy performed by an experienced thoracic surgeon carries a risk of 1 percent or less. Since the chance that a solitary pulmonary nodule is malignant is at least one in four, operation is recommended unless evidence elicited indicates overwhelmingly that the lesion is benign. When it exists, such evidence is obtained most commonly by means of a careful roentgenologic examination.

Roentgenologic Findings

The roentgenologic appearance of a solitary pulmonary nodule can be analyzed in relation to size, shape, sharpness of outline, density and homogeneity.

In general, the larger the lesion, the more likely it is to be malignant. Yet, primary carcinomas must begin as small collections of cells, and size alone cannot be used as overwhelming evidence of benignity. An analysis of the size of 105 solitary nodules which were primary bronchogenic carcinomas excised at the Mayo Clinic during the years 1957 to 1960, inclusive, is given in the table. From this it can be seen that one-third were 2 cm. in diameter or smaller, while almost two-thirds were 3 cm. in diameter or smaller. A bronchogenic carcinoma recently excised at the Mayo Clinic measured 8 mm. in diameter.

Size of 105 Nodular Bronchogenic Carcinomas*

Diameter, cm.	Cases	Percent of total
2 or less	35	33.3
2 to 3	32	30.5
3 to 4	21	20.0
More than 4	17	16.2

*All excised surgically at Mayo Clinic during years 1957 to 1960 inclusive.

Most solitary nodules are ovoid or spherical in shape. Little difference can be noted in comparing the shape of malignant and benign lesions. Rigler[1] has described the "notch" sign as indicative of malignancy, but the presence of this feature only supports the argument favoring thoracotomy.

The sharpness of outline of a solitary pulmonary nodule is not a reliable index of benignity. While, in general, primary bronchogenic carcinomas tend to have less sharp borders than benign lesions, many malignant lesions are quite as sharply defined as any of the granulomas or hamartomas.

Only when one analyzes the homogeneity and density of the nodules, does he find a feature which is reliable in predicting benignity. If the roentgenologic examination shows that calcium has been deposited **within** the nodule, it is highly probable that the lesion is benign. In my own experience with more than 200 cases of resected nodular carcinomas, in only one instance was calcification demonstrable in the preoperative roentgenograms. This case was reported in 1956.[2]

While it must be remembered that calcium can be deposited in malignant pulmonary nodules, as pointed out by O'Keefe, Good and McDonald[3], this calcification is so rarely demonstrable roentgenologically before operation that the risk of a calcified mass being malignant is less than the risk of thoracotomy. In addition, the pattern in which the calcium is deposited may add further weight to the arguments that the lesion is benign.

Four basic patterns of calcium deposition can be recognized roentgenologically: (1) small central nidus, (2) multiple punctate foci, (3) the target or laminated appearance, and (4) the popcorn-ball appearance. The last two of these are certain evidence that the lesion is benign, for the laminated pattern is seen only in granulomas and the popcorn ball pattern only in hamartomas (figure).

Care should be taken in the roentgenologic interpretation of the presence of calcification. It is essential that the evidence show that the calcium has been deposited **within** the nodule. This may be ascertained by observing roentgenograms made in two different positions, for example in posteroanterior and lateral projections. It also may be determined by obtaining laminagrams of planes which cut directly through the lesion. Since this latter method may disclose evidence of calcification in a nodule which does not seem to be calcified when observed on the more usual roentgenograms of the chest, we make it a practice at the Mayo Clinic to obtain satisfactory laminagrams in all cases of solitary pulmonary nodules in which we cannot be absolutely certain of the presence of calcification from observation of the more standard views.

One other piece of evidence in favor of benignity can sometimes be obtained by the roentgenologist. If it can be shown that the nodule has not grown larger over a period of 2 years or more, the chances are excellent that the lesion is benign. This does not mean that one may observe a patient for 2 years or more to see if the nodule grows. Such a practice would be reprehensible. However, if it is known that a roentgenologic examination of the chest was made at an earlier date, an attempt should be made to obtain roentgenograms made at that time in order to compare them with those made more recently. If a nodule was not present at the earlier date, thoracotomy should certainly be advised. If, however, one was present and had been overlooked or disregarded, and if lack of growth for a period of at least 2 years can be demonstrated, then thoractotomy may be postponed until growth is observed. Growth of a nodule does not always mean that the mass is malignant, for we have observed it in cases of granuloma and hamartoma, but it does raise the probability of malignancy to such a point that surgical exploration is advisable.

Clinical & Laboratory Observations

Aside from the roentgenologic examination, there are few clinical or laboratory procedures that can supply overwhelming evidence that a nodule is benign. A history of hemoptysis, the presence of cancer cells in the sputum, a positive bronchoscopic biopsy are features which favor malignancy. Positive reaction of the skin to tuberculin, histoplasmin or coccidioidin may be found in many patients with bronchogenic carcinoma and may be absent in patients with granulomas caused by the related microorganisms. The discovery of a malignant neoplasm elsewhere in the body or the history of the removal of such a neoplasm is strong evidence that the nodule is metastatic, but not that it is benign. Thoracotomy, in such a case, is a matter of surgical judgment, but may offer the patient a chance for cure or at least prolongation of life.

About the only good evidence other than roentgenologic that the lesion is benign is the culture and identification, from sputum or gastric washings, of the organisms causing tuberculosis, histoplasmosis or one of the other fungus diseases. Since this identification often takes several months, since such cultures are usually negative if the patient is asymptomatic, and since removal of solitary active foci of these diseases may be acceptable treatment, little is to be gained by waiting for the results.

Management

The following principles of management can be recommended in the case of any adult patient found to have a solitary pulmonary nodule:

1. Obtain adequate roentgenograms, including laminagrams and views in two projections. If calcium can be demonstrated with certainty to lie within the mass, consider the lesion to be benign, and advise the patient to have yearly roentgenologic examinations. Only if definite growth is demonstrated at subsequent examination should thoracotomy be considered.

2. If the nodule is not calcified, inquire about prior roentgenograms of the chest and if possible obtain them for comparison with the recent ones. If it can be demonstrated that the size of the nodule has not increased for a period of 2 years or more, consider the lesion to be benign and advise the patient to have yearly roentgenologic examinations. Recommend thoracotomy only in cases in which growth occurs.

3. If the nodule is not calcified and prior roentgenograms are not available for comparison, rely on the history and physical examination to discover whether or not the mass may be metastatic from a neoplasm elsewhere in the body. Advise removal only if the primary lesion is controlled and medical and surgical judgment indicate that excision offers the patient a chance for cure or prolongation of useful life.

4. In all other cases, advise immediate thoracotomy. At least one-third of these nodules will prove to be malignant.

Summary

The reported incidence of malignancy in solitary pulmonary nodules varies from 17 to 78 percent. At the Mayo Clinic 44 percent of 340 cases selected for thoracotomy and 25 percent of 705 cases in which a nodule was found on a routine roentgenogram of the chest were proved to be malignant. The true incidence probably lies somewhere between these extremes, but it is sufficiently great to persuade most authorities that surgical exploration is justified in any individual case unless overwhelming evidence can be elicited to indicate that the lesion is benign.

Evidence of benignity is obtained most commonly by careful evaluation of roentgenologic evidence. On recent roentgenograms, only those features relating to homogeneity and density supply evidence which is reliable in predicting that a given lesion is benign. If calcium is evident **within** the nodule, it is probably benign. In only one instance in 200 nodular carcinomas was calcification demonstrable in preoperative roentgenograms. The risk of a calcified mass being malignant is less than the risk of thoracotomy.

If comparison of previous with recent roentgenograms reveals that a nodule has failed to grow for at least 2 years, the chances are excellent that it is benign.

Suggested principles of management include the recommendations that adequate roentgenograms be made and that patients with calcified nodules or uncalcified nodules not manifesting growth for at least 2 years be advised to have yearly roentgenograms. If growth of the nodule is demonstrated by subsequent examination thoracotomy should be recommended.

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AIR-CONTRAST STUDY OF THE COLON

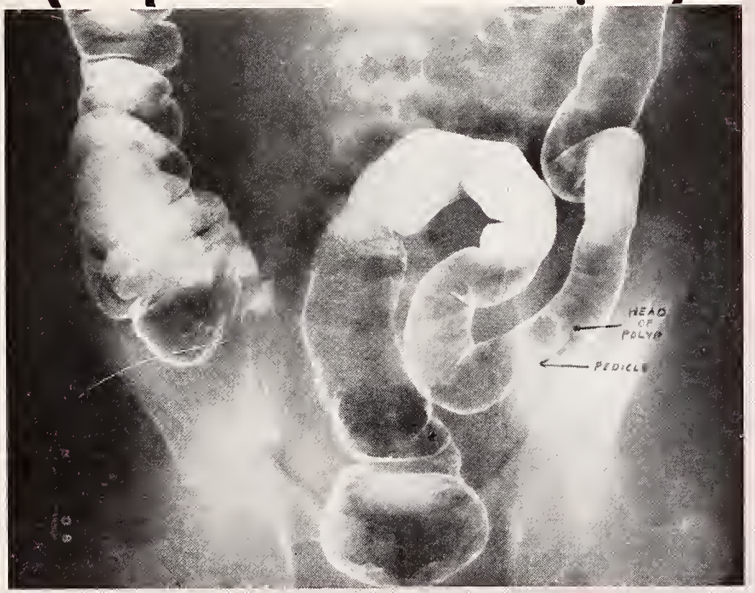

Figure 1. Note the clarity of technique possible with double contrast technique.

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Air-contrast studies of the colon require finesse and patience on the part of the roentgenologist performing the study. This author, known for the excellence of his work in this field, provides important pointers and helpful suggestions for the performance and application of this technique.

THE IDEA for double contrast studies is not new. As long ago as 1896, Becher made radiographs of the colon after filling isolated segments with a solution of lead acetate. He also inflated them with air, thereby making use of both extremes of the density scale to enhance contrast. In 1925, Fischer introduced the double contrast examination per se in which a barium enema was administered first, and then partially or wholly evacuated, after which air was injected. This method permitted visualization of the lumen, study of the mucosal pattern, and above all afforded visualization of polyps. Later, Gershon-Cohen and Weber did much to popularize this method in the United States. More recently, Moreton and coworkers have contributed greatly toward perfecting the technical procedure. Their investigations showed that a barium mixture of nearly colloidal characteristics was the preferred medium for such examination. They realized that during the lapse of time between evacuation of the barium mixture and filling the colon with air some barium might harden on the bowel wall. The result was an unsatisfactory radiographic image. To correct this, they devised a method whereby air could be introduced immediately after the barium enema in such a way as to produce a one-stage double contrast visualization.

I profited considerably from the experiences of these workers and late in 1952 began to use a procedure and apparatus of my own, which have proved most satisfactory for this purpose.

Indications

The primary indications for an air-contrast study of the colon still remain polyposis and colonic bleeding of unknown or uncertain etiology. In regard to polyposis, this type of examination is the only way that one can completely evaluate the total extent of the colon. While statistically, credit for finding in the neighborhood of less than ten percent of the polyps in the colon is attributed to X-ray examination, in addition to those found on sigmoidoscopic examination, I feel that the percentage is higher and significant enough to warrant a complete air-contrast survey of the colon of every patient in whom polyps are found on sigmoidoscopic examination. In a personal survey conducted by me in one of our offices during 1958 and 1959, eighty-one cases of single or multiple tumors of the colon were found. In twenty-eight cases there was tumor proximal to the sigmoid colon, not counting those in the sigmoid colon beyond the range of the sigmoidoscopic study. In addition to the primary indications, this type of study is definitely of extreme value in those cases where the colon is elongated in general, or in certain segments. Resultant overlapping of the colon loops precludes adequate visualization of these various segments of the colon, both fluoroscopically and radiographically. Technically speaking, if a single segment of the colon remains unexplored the colon examination is incomplete. Lastly, I feel that this type of examination is indicated in cases of obesity, where fluoroscopic visualization on a regular study is compromised.

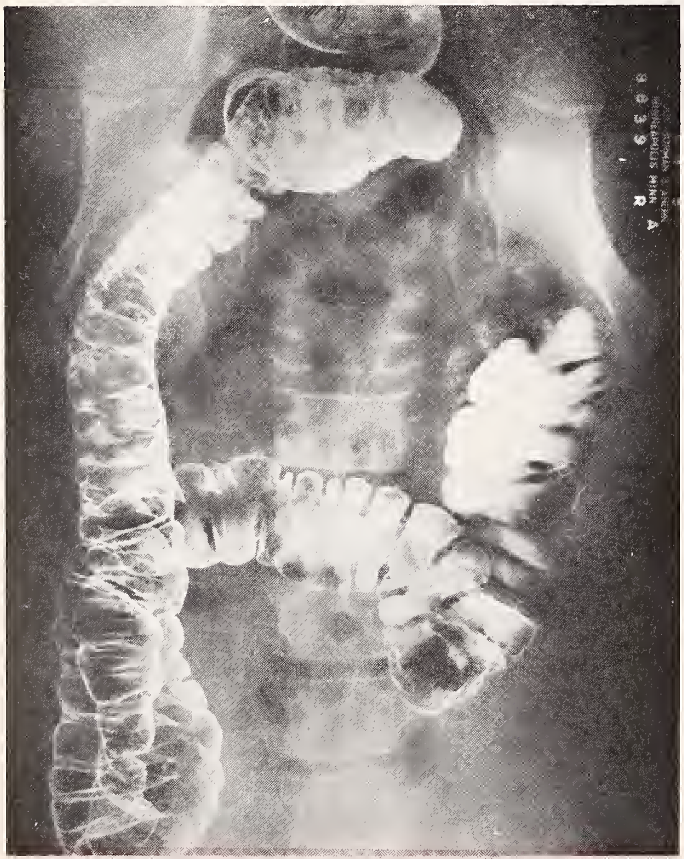


Figure 2. Multiple polyposis of the colon demonstrated by air-contrast colon roentgenogram.

Value

While the air-contrast examination of the colon is the most comprehensive and best way of examining the colon, its general use in every patient is precluded because of the additional work and time necessary in accomplishing the examination. Coupled with the additional film usage, it results in additional cost to either the responsible patient or the institution. Consequently, it is reserved for more of the problem cases. Recently, however, because of the superiority of the air-contrast method of examining the colon, I have incorporated as much of the technic as possible into my regular routine examinations. While the cost of the routine study is not increased, much of the additional benefits of air-contrast visualization are afforded in these examinations.

The examination acquires its value because it will show the presence, as well as the extent and structure, of any mechanical deviation from the normal smooth surface of the mucosa of the colon. The deviation has, however, to be abrupt enough to present some sort of a margin to change the degree of accumulation of barium as compared with the surrounding surfaces. It is difficult to specify any dimension of the lesion below which it cannot be seen, or above which it should be absolutely visible. Lesions as small as 2 m.m. in diameter have been well demonstrated because they present a sharp contrasting margin. Lesions as large as 6 m.m. to 8 m.m. in diameter have been demonstrated with difficulty because of a poorly defined margin present. Many of these deviations are of very questionable nature when first seen, and it is only by repeat studies that findings become clarified. No patient is recommended to be submitted to surgery for polypoid tumor or plaque-like lesions of the colon until the condition has been verified by at least one repeat examination. By far a majority of the lesions can be confirmed by a single repeat study with only occasionally two repeat air-contrast studies required to resolve the pathology.

Preparation of Colon

The greatest problem that is presented with this type of examination is the preparation of the colon. Over the years a rather highly efficient system of preparation has been gradually evolved. The preparation for the examination consists of a low residue diet the day preceding the study, as well as an enema at bedtime. On the morning of the examination the preparation consists of two ounces of castor oil, taken approximately five to six hours before the examination is scheduled. Finally, a salt water enema is taken one-half hour after taking the castor oil. The patient is to have no breakfast on the morning of the examination except for a glass of apple juice, or sugar water. After this preparation, when the patient arrives for the examination he is given one-half to one ounce of Paregoric, followed by a waiting period of about thirty minutes before commencing the study. Paregoric has been added to the schedule of preparation only recently, after its use finally allowed the obtaining of excellent examinations in two patients who presented diffusely irritable colons on the first attempts at study by this method.

Procedure

Briefly, the procedure for the study is carried out in one step, with the patient's colon filled partially with a barium suspension of colloidal nature, followed by the introduction of air into the colon. All of this is done under fluoroscopic control. After the colon has been properly filled and inflated with the resultant coating of the entire mucosa with the barium suspension, radiographic studies are immediately made. Four studies are made on large 14 x 17 films, consisting of (1) a study made with the patient supine and turned up slightly onto the left side, as well as in about twenty degrees Trendelenburg position; (2) a study made with the patient in prone Trendelenburg position, with the head down about forty-five degrees; (3) a study made with the patient turned on the right side with the radiograph made parallel to and across the table top; and, (4) a study made with the patient turned onto the left side and also made parallel to and across the table top. The reason for the left decubitis being last, is that an effort is made to keep the barium away from the ileocecal valve as long as possible to prevent retrograde filling of the ileum. Following these four studies the patient remains on the table and a quick check is made of these large films. Any segments of the colon that remain obscure or in question are then spot-filmed under fluoroscopic control. The goal of the examination, of course, is to give uncompromised visualization of the entire colon.

Complications

The complications or the difficulties that are encountered consist of the following:

(1) Residual fluid or solid material remaining in the colon in spite of the elaborate preparation. In this case, if the amount is not too overwhelming, the examination is carried out followed by a repeat study of the poorly filled or visualized segments of the colon.

(2) Incompetent ileocecal valve with resultant retrograde filling of the terminal ileum, usually interfering with good visualization of the sigmoid colon. Sometimes this can be surmounted by spot radiographic studies made under fluoroscopic control with manipulation of the patient.

(3) Irritability of the colon. This, however, is not a big factor in general. There have been only two cases of diffuse irritability encountered in my experience. Segmental irritability is somewhat common, but this tends to occur late in the examination, after all or most of

the pertinent radiographic studies have been made.

Conclusion

In conclusion, I feel that the air-contrast type of examination is definitely superior and the most comprehensive way there is to examine the total length of the colon. It definitely should be the examination of choice in all cases of polyposis and in those of indeterminate colonic bleeding. However, from what has been said, it is not to be construed that this examination in any way replaces the sigmoidoscopic examination. It should be used to render a more comprehensive over-all study of the colon beyond the range of the sigmoidoscope.

TUMOR CONFERENCE

A twenty-six year old mechanic requested examination for an enlarging right testicle.

One year previously he had noted the first abnormality following a fall and trauma to the scrotum. At that time he was treated with penicillin for an infection of the testicle. As progressive, painless enlargement continued he consulted an industrial physician through his place of employment, and a diagnosis of hydrocele was given. Treatment was not considered indicated at that time.

When first seen he felt well, had no pain and no complaints, except for the enlarging scrotal mass. There were no previous serious illnesses, injuries, or operations.

Physical examination disclosed no abnormality except for a smooth, firm, non-tender right testicular mass, which was approximately five times the size of the normal left testicle. The mass did not transilluminate. It had some irregularity at the junction of the mass with the spermatic cord. There were no abnormal lymph nodes.

The laboratory studies disclosed a normal hemoglobin, leucocyte count, differential, erythrocyte sedimentation rate, urinalysis, and alkaline phosphatase level. The urine gave a negative Friedman pregnancy test. Admission chest x-ray was interpreted as normal. An excretory urogram was entirely normal.

Surgical exploration was recommended to rule out the possibility of tumor. The other diagnoses under consideration were epididymitis, hematocele, or thick-walled hydrocele.

At surgery a tumor was found, and an orchiectomy with high ligation of the cord was carried out.

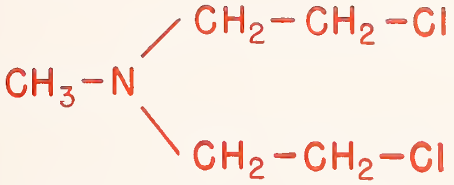
The pathological diagnosis was Embryonal Carcinoma. Microscopically there was an impressive degree of vascular invasion as a prominent feature of the histology.

Further pulmonary radiological studies disclosed the development of bilateral pulmonary metastases. Therefore, it was felt that radical lymph node excision or radiation therapy was not indicated. Three months after surgery the patient was deteriorating rapidly, with little benefit from attempted palliative chemotherapy.

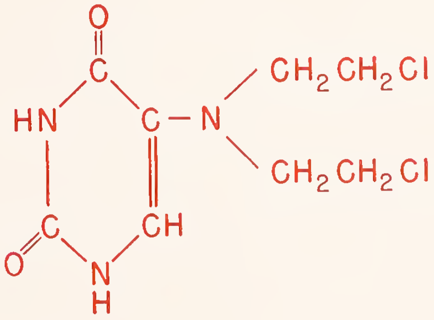
Early evaluation of a nontranslucent scrotal mass is imperative. The incident of trauma cannot ordinarily be considered etiological.

Effect of Uracil Mustard in Malignant Lymphoma and Chronic Lymphatic Leukemia

Chemotherapy for malignant disease is assuming greater importance in our clinical practice . . . The author, a recognized authority in this field, provides an informative study on a new drug.



NITROGEN MUSTARD
methyl bis-(β-chloroethyl) amine



URACIL MUSTARD
5-bis (2-chloroethyl)-aminouracil

ATHANASIOS THEOLOGIDES, M.D.*
B. J. KENNEDY, M.D.**
Minneapolis, Minnesota

OVER THIRTEEN years ago nitrogen mustard, methyl-bis-(2-chloroethyl)-amine, or HN_2, was introduced as a chemotherapeutic agent in human malignancies, especially of the leukemia-lymphoma groups. Ever since, an attempt has been made to obtain new compounds exhibiting greater anti-tumor effect, and less toxicity to the patient. A number of analogs and related alkylating agents have been synthesized and evaluated as potential anti-tumor drugs. Lyttle and Petering (1,2) have synthesized 5-bis-(2-chloroethyl)-aminouracil or "uracil mustard (Figure 1). The methyl group of nitrogen mustard was replaced by uracil.

Uracil mustard is an active carcinostatic and carcinolytic agent in a variety of animal tumors (3,4,5). It was as active as chlorambucil and had less intense side effects than those of intravenous nitrogen mustard (2).

From the Department of Medicine, University of Minnesota Medical Center, Minneapolis, Minnesota.

This research was supported by a research grant (CY3143) from the National Cancer Institute, National Institutes of Health, Public Health Service, and a grant from the Upjohn Company, and a grant from an Institutional Grant of the Minnesota Division of the American Cancer Society. Presented at the Minnesota Society of Internal Medicine, October 17, 1960, Duluth, Minnesota.

* Fellow in Medicine

** Associate Professor of Internal Medicine

A clinical study was undertaken to evaluate the effectiveness of this agent in chronic lymphatic leukemia and malignant lymphomas.

Dosage Schedules

In animals it was established that the compound was more effective and less toxic when given intermittently at maximum tolerated doses, than when given in smaller daily doses. This was true even though the total dose given in the latter manner was equal to or even greater than that used in the former method (2). Therefore, intermittent therapy with relatively large doses was emphasized.

The uracil mustard was given orally in the form of 1.0 mg. capsules initially and 5.0 mg. capsules subsequently. In 14 patients the initial dose was 5 mg. daily for 2 days up to 9 mg. daily for 3 days. As the degree of tolerance and toxicity were established a larger initial dose of 10 mg. per day in 2 divided doses for 3 days was administered to 30 patients. This was approximately 0.5 mg./kilogram per course. Six patients later received total doses of 36 or 40 mg. per course.

The course of therapy was repeated monthly if the initial response was incomplete, until a maximum regression was obtained or progression of the disease was apparent.

Material

Fifty patients were treated: Chronic lymphatic leukemia, 20; Hodgkin's disease, 14; lymphoblastoma, 13; subacute lymphatic leukemia, 1; Kaposi's sarcoma, 1; and mycosis fungoides, 1. All the patients with Hodgkin's disease or lymphoblastoma were in Stage III of the disease. For purposes of analyses these were grouped together into one category. Some of the patients had received previous therapy, but the disease had reactivated or was not responsive. Of these patients, 17 had irradiation therapy, 3 had other chemotherapy, 4 a combination of irradiation and chemotherapy, 4 corticoids, and 1 radioactive phosphorus. No previous therapy had been administered to 21 patients.

Strict criteria for objective improvement were demanded. These consisted of a significant decrease in size or disappearance of tumor masses or nodes, decrease in size of spleen, disappearance of fever, return to normal of leucocytosis due to leukemia, and an increase of hemoglobin to normal. Subjective changes such as a sense of well being, rehabilitation, or decrease in pain or cough are not considered satisfactory criteria for objective improvement.

Results

Objective improvement occurred in 31 of the 50 patients treated (Table 1). Such responses usually were associated with subjective improvement. The quality of the regression was comparable to that seen following intravenous mustard therapy (Figure 2).

Table 1: Response of Tumors to Uracil Mustard

DISEASE	Patients Treated	Objective Improvement	Subjective Improvement
Chronic Lymphatic Leukemia	20*	15	12
Hodgkin's Disease	14	8	8
Lymphoblastoma	13	8	7

*One patient impossible to evaluate

Case Report

S. D., Lymphoblastoma, U.H.#942179.

This 51 year old man was admitted to the University of Minnesota Medical Center on May 10, 1959. During the prior six months there had been intermittent periumbilical pain with gradual appearance of a left upper abdominal mass, ankle edema, fever, night sweats, anorexia, and a 50 pound weight loss. On physical examination there was a large mass filling the left upper abdomen and half the left lower quadrant.

Abdominal exploration revealed a large tumor mass in the left abdomen. Tumor infiltrated into the wall of the proximal jejunum and to the distal end of the third portion of the jejunum. The tumor was adherent and invading a portion of the transverse colon. Operation consisted of resection of tumor of the jejunum, resection of small bowel from the terminal portion of the duodenum down to the proximal end of the ileum with partial excision of the transverse mesocolon and part of the wall of the mid transverse colon. A duodeno-ileal anastomosis was performed.

Pathological interpretation of the tumor was a malignant lymphoblastoma. In some areas tumor extended to the cut margins.

Irradiation therapy to the abdomen was begun May 25, 1959. Ten days later subcutaneous nodules appeared in scattered areas. By June 11, 1959, there

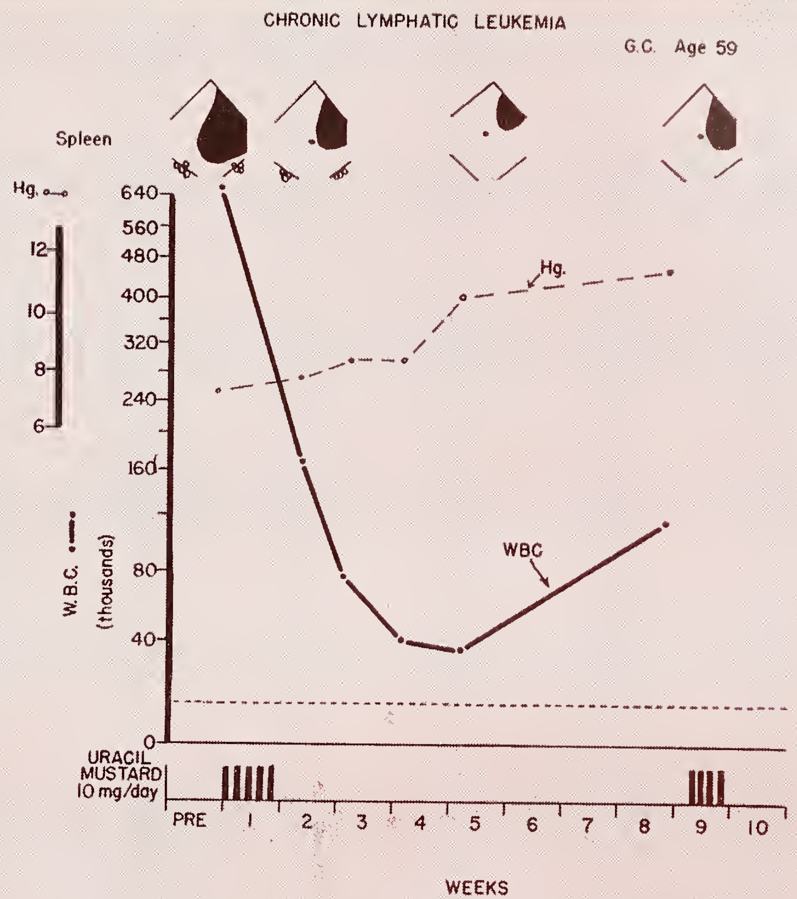


Figure 2: Response to the initial course of uracil mustard. Repeated doses resulted in a normal white blood cell count and disappearance of the spleen.

were multiple subcutaneous nodules, bilateral axillary and inguinal nodes, and right supraclavicular nodes. Irradiation therapy was discontinued, a tissue dose of 1820 r had been delivered to the abdomen. A skin biopsy revealed more malignant lymphoblastoma.

Beginning June 24, 1959, uracil mustard 10 mg. daily was given for 3 days. The patient weighed 115 pounds. The white blood cell count did not fall below 3000 per cmm. Two weeks later the nodules and nodes were smaller and at the end of one month all palpable tumor masses had disappeared. The patient had no complaints. A 60 pound weight gain had occurred 14 months after uracil mustard therapy. Eighteen months after the one course of uracil mustard, the disease remained in complete remission.

* * * *

Analysis of the duration of the intial improvement and the total duration of control of the disease reveals that seven patients have been controlled more than one year. Furthermore, those patients demonstrating objective improvement from uracil mustard therapy have survived longer than those failing to respond. All the patients with chronic lymphatic leukemia have survived an average of 11 plus months. Those that improved have averaged 12 plus months survival while those that failed have an average of 6 plus months. All the patients with malignant lymphoma averaged 8 plus months survival. The responder's average survival is 11 plus months, and the failures 4 plus months.

There was poor correlation between the response to uracil mustard and the previous response to irradiation or chemotherapy. A direct quantitative comparison between uracil mustard and nitrogen mustard could not be made with this small series of patients. Subsequent treatment data has suggested a possible synergistic effect between combined therapy with uracil mustard and adrenal steroids.

Systemic effects: The systemic effects of oral uracil mustard were mild. Gastrointestinal symptoms occurred in 21 (51%) of 49 patients observed. In 5 of these there was only anorexia, while nausea and vomiting occurred in 16. The intensity of these symptoms were less than with intravenous nitrogen mustard.

Leukopenia less than 3000 cmm. occurred in 17 (38%) of 45 patients tested repeatedly. This usually occurred between the seventh and sixteenth day of therapy, but the duration of leukopenia was short.

The platelet count decreased more than 50% of the pretreatment level in 16 (46%) of 37 patients tested. No bleeding problems arose. The return of the platelet count to normal levels was delayed and in several instances repeat therapy was delayed. When the therapy was repeated despite this injury, there were no serious consequences. In all instances the damage to the hematopoietic system was reversible.

Discussion

Lane, et al., in preliminary testing with single oral doses of 0.5 to 0.8 mg./kg. had 2 objective improvements in 11 patients (6). The same investigator later reported that single doses greater than 0.2 mg/kg. were myelosuppressive and gastrointestinal toxicity often prevented further therapy (7). Of 49 patients treated, objective improvement occurred in only 7 patients. It was apparent that larger single doses or more prolonged daily doses were necessary.

Shanbrom, et al, reported the effect of small daily doses in 130 patients (8,9). A dose of 1 to 2 mg. daily was administered until hematologic depression occurred, then 2 to 3 weeks were skipped, and the drug resumed at a dose of 1 mg. daily for 3 weeks of each month. Objective improvements occurred in 66 of the 130 patients, though these responses were primarily in the leukemia-lymphoma patients (60 improvements in 100 patients). This report emphasized the simplicity of the small dose therapy.

In the present investigation, uracil mustard produced objective regressions in 15 of 20 patients with chronic lymphatic leukemia and 16 of 27 patients with malignant lymphoma (10). Intensively administered over 3 days with a total dose of 0.5 to 0.8 mg./kilogram and repeated at intermittent intervals, only mild toxic systemic effects were noted. This method of therapy would appear to be advantageous over daily doses because the number of hematological determinations would be reduced and prolonged therapy would be simplified. It is apparent that uracil mustard is an effective oral alkylating agent.

Summary

Uracil mustard is a new oral alkylating agent with a therapeutic effectiveness comparable to other mustard analogues. The use of large doses for short courses provides a simple therapy for chronic lymphatic leukemia and some malignant lymphomas.

Acknowledgement

The uracil mustard was supplied by Drs. Robert Tallay and James B. Lawson, the Upjohn Company, Kalamazoo, Michigan.

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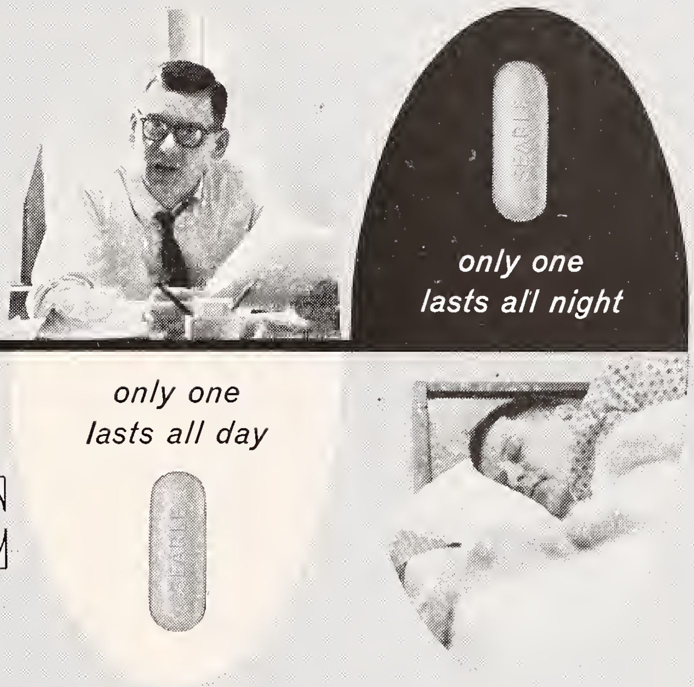
Science News Letter, 80:301—Nov. 4, 1961



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Editorials

IT STARTED AT A BALTIMORE CONVENTION

"The profession to which we belong, once venerated on account of its antiquity, its varied and profound science, its elegant literature, its polite accomplishments, its virtues, has become corrupt and degenerate to the forfeiture of its social position. Are you not imperatively instructed to purify its taints and abuses and restore it to its former elevation and dignity?"

The preceding paragraph was spoken in 1848 by Dr. Nathaniel Chapman, first president of the American Medical Association.

The words sound so contemporary that it was almost shocking to read. Even in those days the American Medical Association was endeavoring to discipline its own ranks. It was then fighting the quacks, the diploma mill doctors, and the medical charlatans. It was attempting to raise the educational standards of medicine. It was trying to maintain the prestige of the calling. It was attempting to provide better medical care to all of its constituents.

Though there are those who endeavor to discredit the medical profession and the activities of our medical organizations, it is not difficult to substantiate the fact that the greatest majority of the doctors are, as of the days of Dr. Chapman, ever vigilant in their eagerness to maintain the dignity and the high caliber of the medical profession. Much of the criticism of the medical profession originates from the concern about paying a medical bill, which, of course, is not the type of merchandise that an individual purchases by design, and it is therefore almost always unwelcome.

Medical services have, to be sure, become more expensive as the years have passed by, but these expenses have not increased to the same extent as many other specialized services. Physicians are not peculiarly endowed with rich relatives and must of necessity make a charge for their service. Every physician is entitled to a fee commensurate with the service rendered. When the services of two doctors are necessary, **each** must be paid commensurately with his services.

"The physician must examine his role as a scientist and healer, counselor and confidante, friend and teacher, neighbor and fellow citizen. He must also think at times like a businessman, for he has a family to feed, clothe, shelter, and educate—so possibly he has a right to feel worthy of his hire."

The preceding paragraph, read by Dr. Leonard W. Larsen, the 115th president of the American Medical Association, at the June convention, 1961, indicates that despite our sporadic individual human frailties our leaders continue to uphold the high principles of a noble profession.

Carl O. Rice, M.D.
Minneapolis, Minnesota

EDITOR'S NOTE: See *"General Practice Defined,"* Page *187*, and *"At The Denver Convention,"* Page *189*.

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SOFT TISSUE SARCOMA:
THE POTENTIAL OF THE "SURGERY OF LUMPS"

Recent writings in the field of neoplasms indicate that intrinsic biologic behavior coupled with host resistance are important factors influencing curability. One consequence of these considerations of the biologic behavior of tumors has been the development of what could be called the "Doctrine of Predeterminism" in cancer therapy, or if you will, the "Que Sera Sera" school of neoplastic thought. "Que Sera Sera" was a charming musical hit, however, "Whatever Will Be Will Be" is not a factual appraisal of the potential achievement of management for many malignancies.

Undoubtedly multiple factors contribute to the poor results obtained in the management of some malignant neoplasms. However, there is little doubt that the design and execution of diagnostic and therapeutic methods contribute to the success or failure to cure malignant disease. This is especially true in the management of soft tissue sarcomas.

Soft tissue sarcomas are diagnosed through the agency of the microscopic examination of tissue from a mass of varying size located within soft tissues. Because the anatomic setting of the tumor has all important bearing upon the design of ultimate surgical therapy, the initial biopsy or local excision done for diagnosis must be executed in such a way that it does not compromise the definitive excision and allows the surgeon to completely excise the biopsy tract or local excision area along with the tumor. Virtually any lump or bump in soft tissue, regardless of size, may prove to be sarcoma upon histologic examination. As a consequence, the management of lumps and bumps carries significant responsibilities.

It seems reasonable to emphasize again the methods of diagnosis and therapy of soft tissue sarcomas based upon the known pathologic features of these tumors.

Venous Tumor Embolism.

A well recognized feature of all sarcomas is their capacity for blood borne metastasis, the cause of death usually being related to spread of this nature such as pulmonary, cerebral or bone metastases. Manipulation of a primary tumor may contribute to this type of spread. It was long ago demonstrated that a few minutes of gentle massage of an animal tumor on two or three days would greatly increase the number of metastases. Recent studies of circulating tumor cells reveal increased numbers of malignant cells in the circulation during some types of operative manipulation. Apparently, many of these cells do not survive and do not set up a growing focus. Nevertheless, manipulations during examination or operation may be a contributing factor in embolization.

Three pragmatic approaches are suggested in the prevention and management of venous tumor embolism:

1. **Minimal manipulation of tumor:** Manipulation should be as minimal as possible. In this connection a carefully planned incisional biopsy or a needle biopsy may be less harmful than an attempt at excisional biopsy. Excisional biopsies of larger masses frequently do not remove all of the tumor and are accompanied by more manipulation of the tumor area.

2. **Preliminary ligation of venous drainage and arterial supply:** Whenever possible, early ligation of both the venous drainage and arterial supply is a logical approach to decreasing the chance of operative embolization of tumor cells. This principle is easily executed in amputative procedures but difficult to ahhere to in local excisional surgery. In this connection, during amputation, a tourniquet is of more value if the amputation is made above the level of the tourniquet rather than below as has been the custom.

3. **Adjuvant chemotherapy:** A third approach to the problem of venous tumor embolism which is gaining merit is based upon the thesis that circulating tumor cells may be killed or rendered unable to grow by various chemotherapeutic agents. Alkalating agents such as nitrogen mustard or theo-tepa, given intravenously have been shown to be capable of killing individual cells and hence reduce the chances of blood borne metastases. This is true in spite of the fact that they have little or no influence upon an established metastases from adenocarinoma or sar-

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coma. Adjunctive chemotherapy may have one of its most logical applications in the prevention of blood borne metastases in the more highly malignant soft tissue sarcomas. Convincing statistics for a significant number of cases of sarcomas managed with adjuvant chemotherapy are not yet available so that this modality of therapy remains empirical at the present time. However, the use of adjuvant chemotherapy should be given careful consideration in planning the therapy of any soft tissue sarcoma.

Lymphatic metastases:

Although this form of spread is not frequently emphasized, lymphatic metastases do occur in the course of some soft tissue sarcomas. Fibro-and liposarcomas have nodal metastases in about 5 to 10% of cases and 10 to 15% of synovial sarcomas show lymph node spread. Rhabdomyosarcomas are generally considered to have lymphatic metastases in an incidence equal to the fibrosarcomas. However, in a personal series of 5 cases, nodal metastases have been present in 3.

It would appear that lymphatic dissections are indicated in the management of selected cases of soft tissue sarcomas: especially 1. Those tumors whose location is such that the regional nodes and radical local extirpation can be removed en-bloc. 2. Tumors associated with palpable regional nodes at the time of primary definitive surgery. 3. The development of enlarged regional nodes at some time following extirpation of the primary tumor.

Local Invasion and Local Recurrence.

The local recurrence rates for soft tissue sarcomas are probably much higher than would be the case if optimum surgical principles were employed in every case. The recurrence rates for fibrosarcoma in several series published in the decade 1946 to 1956 vary from 33 to 94%. Several factors contribute to these poor results. Of major significance is the fact that frequently an initial diagnosis of malignancy was not strongly considered because the nodule or tumor appeared to be small and encapsulated. Pseudoencapsulation is a characteristic of many of these neoplasms. Too often excisional treatment is begun without a preliminary biopsy for histologic diagnosis. Local enucleation along an area of pseudoencapsulation results in incomplete removal. Frequently, if enucleation is not easily accomplished, then in absence of histologic proof of malignancy, a sort of limited local excision is done. This almost invariably cuts through the edges of the tumor, leaves residual and potentially seeds the entire operative bed. Moreover, hemorrhage and exudation of fluid in this operative area may carry tumor cells into tissue planes well beyond the margins of the operative field tending to convert a situation suitable for radical but non amputative surgery into one requiring amputation. In some instances the opportunity for cure has been lost.

It is more or less generally conceded among writers on this subject that the best chance of curing soft tissue sarcomas lies in the hands of the surgeon who makes the first attempt. This is not axiomatic. However, initial failure definitely reduces the chance of success no matter how radical subsequent procedures may be.

Ideally, definitive treatment should not be undertaken without histologic proof of benignancy or malignancy. Despite frequent usage, excisional biopsy must be applied with circumspection. Excisional biopsy of masses potentially sarcomatous is permissible only if certain criteria can be met. The crux of the matter is that excisional biopsy is unwarranted unless it removes the lesion with wide enough margins so that cure has been effected should the lesion prove to be malignant, or done in a fashion that creates an operative field that can be reexcised without prejudicing important structures; (nerves, major vessels and bone) that would have been preserved had an incisional biopsy been done. Too often the operative field and extravasation area of an excision biopsy extends to neurovascular structures or bone that then must be needlessly sacrificed at the definitive, curative approach. Often, excision of a benign appearing lesion is performed and to the surgeon's surprise, histologic evidence of malignancy is obtained. Now comes the problem. Is the lesion cured? Can the pathologist really tell whether tumor has been cut across? Unfortunately, under these circumstances, if the field of the excisional biopsy has abutted nerves, major vessels or bone, the choice becomes either to amputate or wait and see if a recurrence will occur, a truly damned if you do or damned if you don't situation. An incision biopsy may have been preferable.

In defense of local excision, it must be stated that when confined to small lesions anatomically set so that the entire field of excision can be widely

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extirpated without unnecessary amputation if a secondary procedure becomes indicated, the pathologist is provided with more tissue for study. However, it is often not necessary to have the entire soft tissue mass to histologically separate a benign from a malignant lesion. Although incision biopsy and aspiration biopsy are far from perfect, in some circumstances they are preferable to excision when dealing with soft tissue lesions. Incision biopsy should be performed with minimal trauma and minimal exposure of the lesion and placed in such a way as to make for easy wide removal at the subsequent curative surgical attempt. A representative piece of tissue, roughly one by one centimeters in size will almost always enable a histologic separation of benign from malignant tumors. In fact, a properly performed needle biopsy will often suffice for a diagnosis.

In performing an incisional biopsy, the surgeon must be sufficiently versed in gross pathology to be confident he has obtained a representative piece of tissue. This is all the pathologist puts under the microscope when he has an entire lesion. Although frozen sections are valuable, paraffin sections are frequently necessary for an accurate separation of malignant from benign lesions and usually histogenesis is not revealed until the paraffin sections are reviewed. The recent introduction of the cryostadt which permits improved detail on rapid sections may aid in obviating the delay of waiting on paraffin slides. However, if doubt remains, it is usually best to delay the additional day. It is not difficult to convince patients that management is a two step affair consisting of first, proof of the nature of the lesion by biopsy and second, definite surgical extirpation.

Probably the most important criterion in the choice of surgical procedure is the "geography" of the tumor and the likely location of occult invasion. Bowden and Booher[1] use the term "gross anatomic setting" and have admirably emphasized the importance of tumor location in planning surgical management. Using this criterion, **selection of a nonamputative extensive excision versus an amputation is based upon whether or not the tumor can be removed with wide margins of healthy muscle, fat, fascia and skin.** (These tumors grow undetected within surrounding muscle, along fascial planes, vessels and nerves and do not show distinct margins!)

Amputation should be performed for a sarcoma regardless of histalogic type when, because of nearness to bone, joint or vessels, the tumor cannot otherwise be adequately removed. For example, sarcomas arising in the popliteal or anticubital space or at the wrist usually require amputative procedures, while larger lesions located within large muscle bellies may be resected with preservation of the extremity. These factors of local invasion are probably more important than histogenesis in choosing the operative approach.

To sum it up, virtually any lump or mass in soft tissue may be found to be a sarcoma when submitted to histologic examination. Accordingly, the surgery of soft tissue nodules and masses carries rather profound responsibilities. Often a preliminary incisional biopsy or needle biopsy rather than local excision is the preferred initial step in planning a rational surgical attack to a soft tissue mass. Too often, excision biopsy of a soft tissue mass cuts across a soft tissue sarcoma and creates an operative field that renders subsequent radical local extirpation noncurative or leads to amputation where a non-amputative procedure could have been used. Adequate paraffin sections and histologic evidence of malignancy are usually required before proceeding to definitive surgery.

Definite management should embrace the known factors of spread of the disease—local and distant. This should include, if possible, a minimum of manipulation of the tumor, preliminary ligation of veins and arteries and at least a consideration of adjunctive chemotherapy. The location of the tumor or "gross anatomic setting" is helpful in choosing between amputative and non-amputative procedures. Local removal must be designed with appreciation of the indistinct nature of the margins of soft tissue sarcomas. True encapsulation is rarely present and extension within muscle planes and along contiguous fascia planes and nerve trunks is the rule. Enbloc removal of the primary lesion with regional nodes is indicated in selected cases.

Stuart W. Arhelger, M.D.
Arnold J. Kremen, M.D.
Minneapolis, Minnesota

Bowden, L., and Booher, R. J.: The Principles and Technique of Resection of Soft Parts for Sarcoma. Surgery: 44:963-977, 1958.

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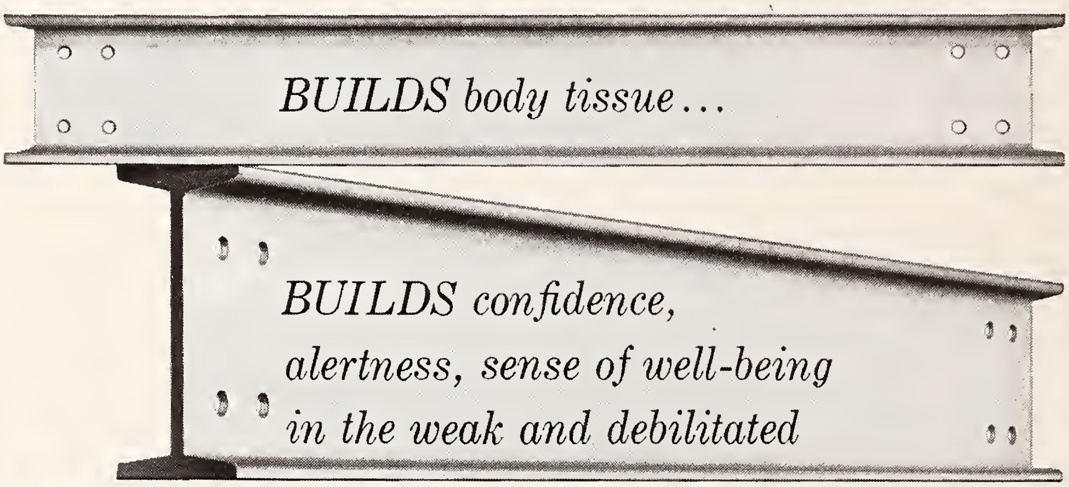
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Abstracts and Briefs

DELAYED HEALING OF BURNS

The authors discussed the perplexing problem of patients with extensive burns which have become refractory to treatment. Five cases are presented in which this delayed healing became a problem in spite of good initial surgical care which included adequate initial replacement therapy, antibiotics, and early skin grafting. Yet these patients regressed into a state of physiologic and psychologic deterioration, with extreme weight loss, anorexia, anemia and hypoproteinemia.

Full-thickness loss of skin imposes a high degree of susceptibility to local infection, and progressive scarring beneath infected granulations results in diminished vascularity of these recipient areas. When the recipient site is less receptive, graft failure is more likely to occur. Severe anemia in these patients is usually due to malnutrition and/or chronic blood loss from the granulating open wounds.

In caring for the patient who has these chronic wounds, nutritional restoration is of primary importance. Improved dietary intake with weight gain are useful criteria for determining time for successful grafting. Attempted grafting prior to nutritional restoration may well be unsuccessful and, in fact, skin donor sites may fail to heal, increasing the hemoglobin and protein loss. The initial correction of the chronic anemia and protein deficit will often require multiple whole blood transfusions.

During the period of nutritional restoration prior to grafting surface infection in the granulating wounds is combatted by daily detergent baths in the Hubbard tank. Dressing changes in the tank or tub minimize hemorrhage from the granulating sites and reduce the demand for narcotics and anesthesia. Wounds of long standing, if possible, should be excised down to more healthy tissue before applying grafts. Application of the skin grafts several days after excision of the fibrotic granulating areas may be desirable because of difficulty in obtaining satisfactory hemostasis immediately. Six to eight days following grafting, the detergent baths are reinstituted to control infection about the newly grafted sites.

After complete wound coverage has been accomplished, definitive reconstruction of healed deformities may be planned.

Vigorous and continuing treatment is essential in the early care of patients with severe burns, lest the period of "golden opportunity" be passed, and the patient regress into a refractory state that is associated with chronic draining open wounds and delayed healing.

Lyle V. Kragh, M. D.
Minneapolis, Minnesota

"Late Problems Associated with Delayed Healing of Burned Patients." Benson, J. W.; Hubay, C. A.; Drucker, W. R.; DesPrez, J. D.; and Gharib, A. J.; Trauma 1:46 4, Sept., 1961.

TRANSILLUMINATION OF THE SKULL

Transillumination of the skull of infants and of some children up to three years of age is a simple and rewarding part of clinical examination. A standard two-cell flashlight fitted with a rubber collar that molds to the contour of the cranial vault is used. Normally a glow will surround the flashlight but not in excess of 2.5 cm. in the frontal regions or 1 cm. in the occipital regions. Its usefulness is precluded in older children because of the thicker scalp and skull.

Complete transillumination may be observed in patients with hydranencephaly (absence of cerebral mantle), hydrocephaly (with a cerebral mantle 1 cm. or less thick), subdural hygroma; partial transillumination limited to one side or part of the head may be seen in patients with porencephaly, subdural effusions, clear fluid collections beneath the scalp (not blood), dehydration and various cerebral defects increasing the space between the brain and undersurface of the skull.

R. G. Siekert
Rochester, Minn.

"Demonstration of Intracranial Pathology by Transillumination" Dodge, P. R., and Porter, P. AMA-Arch. Neurol., 5:594, Dec., 1961.

TREATMENT OF FRACTURES OF THE TIBIA

The authors realize that severe complications resulting from surgery could only be eliminated by foregoing open reduction. Therefore, they outlined a method avoiding open reduction of the tibia. This method involves care of the soft tissue wound in open fractures with secondary closure. Closed fractures are treated by immediate reduction, mostly by gravity with the leg hung over the side of the operating table and application of a short cast to be immediately followed by a completion of the cast to the groin with the knee straight. A heel is applied to the cast for weight bearing as tolerated without pain. This method accepts shortening up to three-fourths of an inch, although the average shortening is said to be less than three-eighths of an inch.

The series is from the United States Army Hospitals comprising 207 consecutive tibial fractures, 70 percent closed and 30 percent open. When anesthesia was necessary, either local infiltration into the fracture or spinal anesthesia was preferred. Seventy percent of the patients had associated injuries which prevented weight bearing within the first week.

Meticulous attention is paid to the application of the cast with minimum padding. Overall alignment must be within 10°of normal or wedging of the plaster cast is later accomplished without anesthesia. Photographs emphasize that the thigh portion of the

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cast should go to the groin; the knee in full extension. Meticulous care is necessary to get normal rotation of the fragments, initially. No appreciable loss of proper rotation has been found despite the straight position of the knee.

The authors state, "It has been our primary axiom to avoid open reduction as the only means of forestalling the occasional severe complications of surgery."

Early ambulation is with crutches to the tolerance of pain. The emphasis is placed on the normal follow-through gait. It is desirable to leave the original plaster on at least eight weeks before a change. It has been noted that changes before this time may promote delayed healing.

An unusual phase in rehabilitation is absolute bed rest after release from the cast. During this period the joints are loosened up. The patient is not allowed out of bed until he has practically full range of motion in all the joints including the knee, foot and ankle.

The average time of healing and return of duty for the 207 patients was five months. In 88 percent of the patients, the healing time fell between four and six months. The remaining 12 percent varied from two months to fourteen months. Generally, they have advised about four months as the minimum cast immobilization.

When their series is compared to other published series, they note that there had been no amputation. Their slowest case at 14 months seems to be much shorter than those in other series, especially those having had open reductions. They mention that 88 percent of the open wounds were treated by debridement with 12 percent having a simple wound cleansing, 11 percent required skin grafting. No major infections resulted. They noted practically no shortening from that which was present immediately after the fracture.

Secondary surgery was necessary in five cases. This included secondary osteotomy of the fibula. Bone grafts were necessary in three of these cases. The series included three refractures.

In conclusion, the authors feel that the methods employed resulted in healing in all of the 207 cases with the average healing time of five months, the slowest being 14 months. They note this is faster than the average reported series.

They conclude: "We believe that the consistency and rapidity of union obtained is attributable to the avoidance of surgery or traction with the acceptance of some minor degree of shortening."

The favorable functional results may be attributed above all to the rapidity of healing of the bone, and also to the functional stimulation of the continuous weight bearing and the closer attention to rehabilitation.

Kenath H. Sponsel, M.D.
Minneapolis, Minnesota

"Nonoperative Treatment of the Fractured Tibia by Immediate Weight Bearing" Dehne, E., Metz, C. W., Deffer, P. A., and Hall, R. M.; J. Trauma, 1:514. Sept., 1961.

RETROPERITONEAL ABSCESS

The authors feel that despite widespread use of antibiotics, retroperitoneal abscess remains a diagnostic and therapeutic problem of considerable importance. A series of 189 patients seen in the Department of Surgery of Cincinnati General Hospital and University of Cincinnati is the source of the material for the review. The cases were seen during the years 1912 to 1961. Considerable study has been made of the anatomy involved in retroperitoneal infections, and a number of excellent figures clearly delineate anatomical features. The group reviewed excludes pelvic and subdiaphragmatic abscesses, and is composed of three subgroups: 1.) Anterior retroperitoneal space abscesses, 2.) Posterior retroperitoneal space or perinephric abscesses, and 3.) Retrofascial abscesses.

The last group originated primarily in the vertebrae and had a preponderance of tuberculous infections.

The perinephric space abscesses largely originated from infection or injuries of the kidney.

The anterior retroperitoneal space infections usually came from abnormalities of the adjacent organs such as retroperitoneal appendicitis, and lesions of the colon, pancreas, duodenum or biliary system.

The common symptoms were chills, fever, abdominal or flank pain, nausea, vomiting, night sweats, and weight loss. Not infrequently, however, the pain was referred to the lower extremity, with little or no reference to the abdomen or back. The early recognition of the condition was difficult, and in recent years the diagnostic problem was accentuated by the frequent masking effect of antibiotics.

There were twenty cases in which Mycobacterium tuberculosis was found. In fifteen cases Actinomycosis bovis was the primary organism. The majority, however, were polymicrobic with mixtures of staphyloccus, streptococcus and coliform organisms.

Roentgenograms showed abnormalties in 90% of cases in which they were employed. Illustrations of such findings were abnormal psoas shadows, scoliosis, loss of renal outline, bone destruction, and gas bubbles. Ancillary studies with excretory urograms, chest films, and barium studies of the gastrointestinal tract were often helpful.

Treatment was most successful when it consisted of prompt adequate surgical drainage and appropriate adjunctive antibiotic therapy. Most failures were due to delay in diagnosis or to conservative management.

The article presented is of value not only for the clinical data supplied, and the instructive conclusions regarding principles of management, but is especially commendable for the study in basic anatomy presented by means of excellent diagrams and illustrations. Retroperitoneal infections will frequently continue to be difficult diagnostic problems, but the application of the principles learned from the study of a large amount of material as presented in this review should permit a great improvement in survival rates.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Retroperitoneal Abscess" Altemeier, W. A., and Alexander, J. W. Arch. Surg. 83:44, October, 1961.

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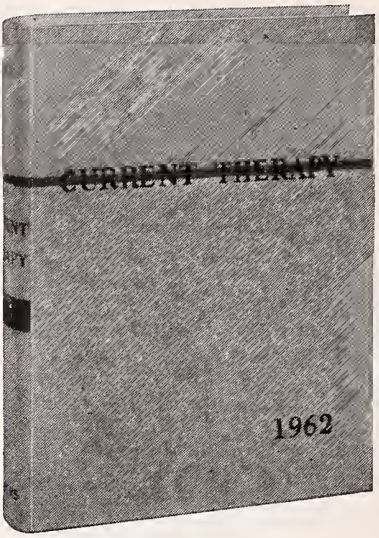

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Book Reviews

CLINICAL HEMATOLOGY—by Maxwell M. Wintrobe—Lea & Febiger, Philadelphia. Fifth Edition, 1186 pp. 1961.

A clinical textbook must be a flexible instrument to serve the needs of different groups. The student in the midst of his courses might use a text as gospel to be crammed verbatim for future use in examinations. The practitioner in a small community with sparse library facilities might use a text such as this as a standard reference giving reasonably comprehensive discussions on hematologic problems. The medical specialist with a good library facility at his disposal might use the textbook as a handy lead to commence his study of a sanguineous problem expecting to find the most informative references to pertinent literature. From these points of view Wintrobe's book is an admirable work fulfilling all these functions. It could hardly be otherwise carrying on the flyleaf the imposing list of editions since the first in 1942, the many reprints, and the translations into Spanish and Italian. It is evident throughout that this edition has been thoroughly revised since 1956 when the fourth edition appeared. The extensive bibliographies that follow each chapter are laced with references later than 1956. Inclusion of some 1961 titles suggests that Dr. Wintrobe continues his revision until the type is set on the printer's table.

Reuben Berman
Minneapolis, Minnesota

REHABILITATION OF A CHILD'S EYES, 3rd Edition. Herbert M. Katzin, M.D., F.A.C.S. and Geraldine Wilson, R.N. St. Louis, C. V. Mosby Co., 1961. 107 pages, numerous drawings, glossary of terms, no index. Price: $3.75.

This slim, simply written and well illustrated volume is the third edition of a handbook written in 1949 by R. G. Scobee, M.D., primarily for parents of children afflicted with squint. Approximately 1.5 percent of children in this country have crossed eyes. Often the physician is so busy that he does not have time to explain the condition thoroughly to the parents. Even so the explanation would be too difficult to comprehend at one sitting. Also physicians in other branches have little reason to learn about strabismus in detail. There are few conditions in the field of medicine which require greater cooperation between the parents and the physician than the care of these children.

Eyes which are noted to be crossed at birth or later are not going to straighten with the passage of time. Treatment should therefore be begun as soon as the condition is noted. Eyes which cross "a little" need treatment just as much as eyes which cross "a lot." The parent who decides to wait and see if the child will outgrow the squint permits the golden opportunity for a functional cure, i.e. fusion, to pass and subjects him to the psychological scars of being different from his fellows. The best that can be hoped for in many of these cases is a cosmetic result, i.e. straight eyes with no fusion. Vision which never develops consequent to infantile squint cannot be rehabilitated later in life even though the eyes are nicely straightened surgically.

Treatment consists of a carefully planned combination of occlusive patching, cycloplegic and miotic drops, eyeglasses, extraocular muscle surgery and orthoptic exercises. These methods are explained with drawings even of the surgical procedures, giving the parents a feeling of belonging to the therapeutic team. The investment in rehabilitation of a child's eyes will pay dividends during his entire life. The results are in direct proportion to the effort expended. If the job is done right while the child is young, preferably before the age of 4 years, a perfect result is usually possible.

William S. McClanahan, M.D.
U. S. Army, Chinone, France

EXECUTIVES' HEALTH SECRETS by William P. Shepard, Dobbs-Merrill, $4.95—252 pages.

This book is written by a physician who, as a former medical director of the Metropolitan Life Insurance Company, has viewed the health records of thousands of individuals. It is written in the language of a physician speaking to an intellectual patient.

There is a chapter on how to use and abuse a physician. This could be an eye-opener to doctors who find it difficult to satisfy their patients.

This book makes interesting reading for the physician, valuable and instructive reading for the executive, and should serve as an excellent supplement to the recommendations of the family physician to his patient whose ailments might be largely psychosomatic.

Carl O. Rice
Minneapolis, Minnesota

TRAUMA by Marshall Houts, L.L.B.—Matthew Bender & Co., Inc.

This is a reference book intended largely for attorneys. It contains suitable line drawings of gross anatomy. Its remaining chapters deal with the physiology and gross anatomy of the skin and it deals with the industrial diseases of the skin which refer to contact dermatitis.

It contains an interesting chapter dealing with trauma of the kidney and it provides a few multiple choice word definitions.

These chapters should be interesting light reading for the physician and of educational value to the attorney who wishes to brush up on his medical knowledge.

Carl O. Rice
Minneapolis, Minnesota

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Vitamin C	200 mg.
Pyridoxine Hydrochloride	5 mg.
Calcium Pantothenate	20 mg.
Vitamin B_{12}	5 mcg.

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“nutrition...present as a modifying or complicating factor in nearly every illness or disease state”[1]

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases “Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease.”[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis “It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . .”[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases “Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult.”[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] “Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes.”[9]
8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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Recent medical literature[1-27]—adding to an already massive bibliography—continues to document the effectiveness of well-tolerated Terramycin in respiratory and other infections.

Recent bibliography: **1.** A.M.A. Council on Drugs, New and Nonofficial Drugs 1961, Philadelphia, Lippincott, 1961, pp. 142-147. **2.** Beckman, H.: The Year Book of Drug Therapy, Chicago, Yr. Bk. Pub., 1961, p. 271. **3.** Eastman, N. J., and Hellman, L. M.: Williams Obstetrics, ed. 12, New York, Appleton-Century-Crofts, 1961, pp. 845-1035. **4.** Keefer, C. S., in Modell, W.: Drugs of Choice 1960-1961, St. Louis, Mosby, 1960, pp. 141, 146, 147. **5.** Huang, N. N.: J. Pediat. 59:512, 1961. **6.** Smith, R. C. F.: Brit. J. Clin. Practice 15:345, 1961. **7.** Asay, L. D., and Koch, R.: New England J. Med. 262:1062, 1960. **8.** Berry, D. G., et al.: Lancet 1:137, 1960. **9.** Osol, A., et al.: The Dispensatory of the United States of America, ed. 25, Philadelphia, Lippincott, 1960, pp. 953, 1556. **10.** Adams, A. R. D.: Brit. M. J. 1:1639, 1960. **11.** Jung, R. C., and Carrera, G. M.: Dis. Colon & Rectum 3:313, 1960. **12.** De Lamater, J. N.: Am. J. Gastroenterol. 34:130, 1960. **13.** Stewart, W. H., et al., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. II, chap. 5, p. 19. **14.** Wellman, W. E., and Herrell, W. E., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. I, chap. 44, p. 13. **15.** Wenckert, A., and Robertson, B.: Acta chir. scandinav. 120:79, 1960. **16.** Alstead, S.: Dilling's Clinical Pharmacology, ed. 20, London, Cassell, 1960, p. 462. **17.** Grover, F. W.: Texas J. Med. 57:355, 1961. **18.** Gardiner, W. P., and Gomila, R. R., Jr.: Scientific Exhibit, Venereal Disease Seminar, U.S. Public Health Service, Feb. 28-Mar. 3, 1961. **19.** Jacques, A. A., and Fuchs, V. H.: J. Louisiana M. Soc. 113:200, 1961. **20.** Nathan, L. A.: Scientific Exhibit, 15th Clinical Meet., A.M.A., Denver, Col., Nov. 26-30, 1961. **21.** Ullman, A.: Delaware M. J. 32:97, 1960. **22.** Lamphier, T. A.: Scientific Exhibit, New York State M. Soc. Meet., New York, May 7-13, 1960. **23.** Freier, A.: Paper presented at Michigan Soc. Obst. & Gynec., Detroit, May 3, 1961. **24.** Logan, K. M.: Scientific Exhibit, Ann. Meet., Ohio Acad. Gen. Practice, Cincinnati, Sept. 13-14, 1961. **25.** Altemeier, W. A., and Wulsin, J. H. (A.M.A. Council on Drugs Report): J.A.M.A. 173:527, 1960. **26.** Krol, W. J.: J. Abdom. Surg. 3:78, 1961. **27.** Potempa, J.: Med. Klin. 56:352, 1961.

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GENERAL PRACTICE DEFINED – A NEW IMAGE

JOHN E. VERBY, JR., M. D.*
Rochester, Minnesota
***Olmsted Medical Group**

HERODOTUS, the father of history who wrote in 400 B.C., described very clearly the group of doctors in Egypt as being divided into many specialties. "Each physician treats a single disorder, and no more; thus the country swarms with medical practitioners, some undertaking to cure diseases of the eye, others of the hand, others of the teeth, and of the intestines."[1]

The concept of specialization in medicine is not new. The defense of general practice against specialization is part of Galen's argument with his adversaries. The issue has been argued again and again in the history of medicine with each side pressing the advantages in its own favor. We have done this for over 2,000 years and I propose we stop this nonsense now. There is no argument. Both fields of medicine are sorely needed by the patient in the organization of medicine of today and for the future. Each must complement the other, just as the shortstop needs the rest of his teammates to complete most of his double plays. We are a team with each member complementing the other.

If one takes the definition of general practice as stated by the committee of the American Medical Association we would have something like this: ". . . general practice is that aspect of medical care performed by the doctor of medicine who assumes comprehensive and continuing responsibility for the patient and his family regardless of age."[2] This immediately eliminated the pediatrician and the internist. This definition was composed and agreed upon after long deliberation, not by leaders of the academy of general practice alone but by prominent leaders in the specialty fields and in the fields of medical education.

If we can assume that this is a valid definition then we can make another assumption: there is no specialty group that is willing to accept and assume the responsibility outlined by this definition.

When I started in general practice over twelve years ago, over 60% of all medical doctors were willing to assume a good share of this responsibility; today this figure has dropped to less than 30%. If the trend continues, the results could be devastating, not only to the patient but to the entire medical profession. In the past the horse and buggy doctor had created a favorable image to the family, despite his inadequate technical knowledge. The paradox today is that, the favorable public image of the medical profession is gradually slipping away despite the fact that our country possesses the finest and the most highly trained physicians in the history of mankind.

Our new president of the American Medical Association has called for a new spirit in our profession. The spirit which he advocated included concern for the socio-economic and religious requirements of the patient. How many of us concern ourselves with these aspects of our patients? Do we leave that to the secretary, the receptionist, the administrator, clergyman, etc., getting glimpses of these aspects of our patient only when the bills are not paid? How many of us are using and mobilizing the religious and moral forces within our patients to help heal their illness and to develop their happiness? These needs should not be minimized or downgraded by the medical profession.

CONTINUED

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Our American Medical Association has been deeply concerned about the future of the family physician. Why is our national leadership concerned about the family physician of the future? Is the family physician essential to this satisfactory and comprehensive medical care of the American public? Is the public, generally speaking, demanding a central source for the medical care of themselves and their families? These questions were answered in the affirmative by specialists and educators in the field of medicine. They concluded that, we should be developing physicians prepared to serve in the capacity of the family physician. A former dean of a medical school and now chancellor of the same university, a physician, stated it clearly by saying that the profession as well as the public needs the family physician because he creates a favorable image to the family members. Sociologists tell us the image is important for the harmony, integrity, happiness, and security of the basic unit of our society—the family.

I predict for the future a new image of the general practitioner — a physician accepting in this era of rapid change a broader concept of continuous and comprehensive medical care for the basic unit of our society. This in turn will complement the work of the specialist and upgrade our comprehensive care of the family.The concept I have mentioned has already met with overwhelming success in some hospitals, as evidenced by the Hunterdon Experiment for a community hospital.

May I suggest that, 1) the leaders of the specialty groups, medical educators generally, and the American Academy of General Practice, should establish suitable criteria for the development and maintenance of highly trained personal family physicians; 2) the general practitioner and specialty physicians work together in closer harmony in a creative type of leadership to encourage our medical students to broaden and increase their medical competence as a family physician; 3) specialty groups and the general practitioners begin to erase the image that general practice is a vanishing and unproductive field of medicine. In doing these things we will strengthen our public relations and improve the image of our profession with one of the most important persons in the world—our patient.

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AT THE DENVER CONVENTION

Address by Leonard W. Larson, M. D., President of American Medical Association to the AMA House of Delegates at the Denver Hilton Hotel, November 27, 1961.

We are engaged in a historic struggle to preserve our country's unique system of medical care and our stature as a profession. We fight because we have dedicated our lives to providing the best medical care possible to all our patients —we fight for our patients and their well-being. We fight because the Administration's medical care proposal, if enacted, would certainly represent the first major, irreversible step toward the complete socialization of medical care. A proposal which places the primary responsibility for the purchase of health care on the federal government—financed by compulsory payroll taxes and equivalent taxes on employers, administered directly by the Social Security Administration, providing benefits without regard to financial need, and for which the federal government has no logical responsibility—certainly such a pro-

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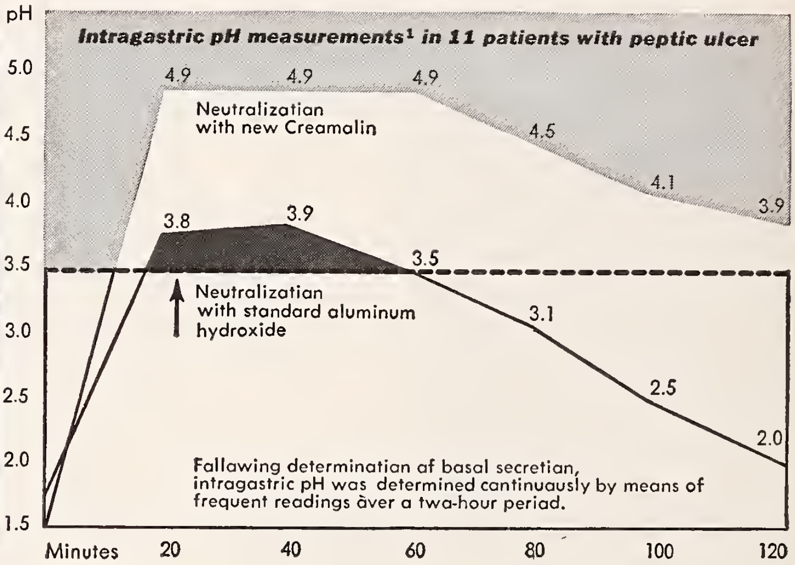
Intragastric pH measurements[1] in 11 patients with peptic ulcer
pH
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
4.9
4.9
4.9
Neutralization with new Creamalin
4.5
4.1
3.9
3.8
3.9
3.5
Neutralization with standard aluminum hydroxide
3.1
2.5
2.0
Following determination of basal secretion, intragastric pH was determined continuously by means of frequent readings over a two-hour period.
Minutes
20
40
60
80
100
120

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References: **1.** Schwartz, I. R.: *Current Therap. Res.* 3:29, Feb., 1961. **2.** Beekman, S. M.: *J. Am. Pharm. A.* (Scient. Ed.) 49:191, April, 1960. **3.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:381, July, 1959. **4.** Data in the files of the Department of Medical Research, Winthrop Laboratories. **5.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:384, July, 1959.

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posal can properly be categorized as "socialized medicine."

The immediate objective of this legislation is to substitute compulsion for voluntarism in the financing of health care. It is to substitute decision-making from the individual to a small elite corps of federal administrators for the independent decisions of millions of consumers of medical service. One candid authoritarian said, "Individuals cannot be trusted to spend their medical care dollars prudently."

The compelling issue then is socialization versus voluntarism—or compulsion versus freedom of choice. We are **for** voluntarism. We do not believe that Americans, acting either as citizens or as patients, require central direction from government in their choice of doctor or hospital, in the spending of their health care dollars, or in their selection of the health services and facilities best suited to their own individual needs.

Only in the case of the medically needy should government intervene. We vigorously support the Kerr-Mills Medical Aid for the Aged Act because it is tailored to help those who need help. Through federal grants-in-aid through the states the Kerr-Mills Act will solve the health care needs of the relatively insolvent aged. Conversely, the King bill abrogates the rights of the states since the program of health benefits is administered directly from Washington. All eligibility requirements are established in Washington both for recipients of benefits and the vendors of care.

We take our stand for voluntary cooperation, for preservation of the historic Federal-State organizational structure, for individual responsibility, for help for those persons who **need** help. We are **for** an improved public attitude toward older citizens. We are **for** their integration into the mainstream of society. We urge liberalization of retirement policies in industry to permit continued productivity of older employees and their employment in any capacity for which they are qualified. We are **for** measures designed to protect the earning capacity of those who can take care of themselves. We sponsored the national Congresses on mental illness, quackery, voluntary health insurance, Kerr-Mills implementation, and aging.

We are **for** a free profession. We are **for** the preservation of our constitutional republic; we are opposed to a welfare state. We are **for** the right of our citizens to spend their own dollars in their own way, not for Washington authoritarians to spend their money for them. Our philosophy is wholly positive. It reflects the spirit that lives throughout American history—the philosophy that a dynamic, progressive society is the result of the voluntary actions of a free, responsible people.

We are opposed to the King-Anderson bill because the proponents of this type of legislation have cleverly promoted the false idea that earmarked payroll and employer taxes would be voluntary prepayments against the cost of health care benefits received subsequently in retirement. The fact is that the King bill levies a compulsory tax on young workers and their employers to pay for a federal program of health benefits for older people, millions of whom are self-reliant and solvent. The King-Anderson program does not provide insurance or prepayment of any type, but compels one segment of our population to underwrite a socialized program of health care for another, regardless of need.

We urge all Americans to look this gift horse in the mouth, because if we don't the consequences could be tragic. It could cost more than all other government functions and expenditures; financed by a total tax of 20 percent on all earnings up to $9,000.

Vilification of the AMA has been a principal tactic of our opponents, led by the Administration and the AFL-CIO. An enormous smear campaign was launched. It is being carried out by labor's radio and TV outlets, the labor press, some commentators, and certain government spokesmen. We can expect even more bitter attacks in the year ahead. The latest attempt of labor and the Administration to build pressure on Congress is the organization of the National Council of Senior Citizens for Health Care through Social Security. In announcing the formation of the National Council, Mr. Forand bluntly stated, ". . . The primary purpose . . . is to weld senior citizen organizations and millions of interested individuals from all over the country into one strong and effective voice in Washington. Our immediate goal is to secure legislation providing health care for the aged through Social Security . . ."

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I believe, however, that the vast majority of our older citizens are self-reliant. Further, I believe that when the true objectives of this lobbying organization are made clear to them, and when they realize that they are being manipulated —cynically—as political pawns, they will make their feelings known. Today, only 14 percent of the aged over 65 are on public assistance, whereas 22 percent were receiving public aid in 1950. Today, more than 53 percent of all persons over 65 have some kind of health insurance as contrasted with only 26 percent in 1952. In many respects, the aged group is better off than any other group in the nation. Their liquid assets are higher, and have risen faster than any age group; a much higher percentage own their homes free of mortgages; their financial obligations are significantly less and they enjoy tax advantages not available to younger citizens. Hospitals report they have less difficulty obtaining payment from patients over 65 than from younger patients. The growth of annuity plans, company purchase of health insurance benefits for retired employees, life insurance accumulation and many other factors have led to a significantly more favorable economic situation for our older citizens than has ever been true previously. Competent economists predict that this improvement will continue at an accelerating pace. We are, then, dealing with a diminishing problem which belies the crisis propaganda of our opponents.

In December, 1960, we made it clear that, notwithstanding the election of an Administration dedicated to the King-Anderson program, we intended to fight this proposed government takeover of medicine to the limit of our ability. As physicians, we knew what this legislation would mean, not only to our freedom as a profession but, more important, to the long-range welfare of our patients. We knew that when physicians are forced to become pawns of federal administrators and politicians, rather than responsible to their patients, it adversely affects the quality of care.

We have achieved our initial objective of arousing physicians and alerting Congress to the soundness of the Kerr-Mills approach and the dangers inherent in the radical King-Anderson proposal. We are now engaged in stimulating effective action by state and county medical societies, individual physicians, Women's Auxiliaries and others. Special efforts are being made to correct the falsehoods disseminated by the proponents of King-Anderson legislation.

Primary attention will continue to be given to implementing the Kerr-Mills Act, promoting voluntary health insurance and prepayment plans designed for the aged, and upgrading nursing homes. We will strive to create a new climate of hope, pride and self-reliance for the aged.

END

Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section do not necessarily represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

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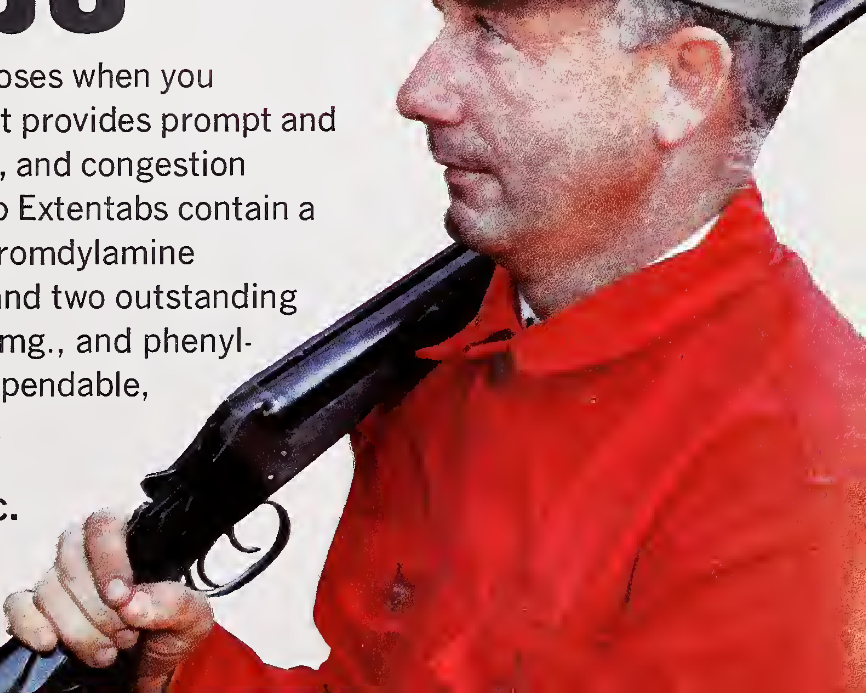

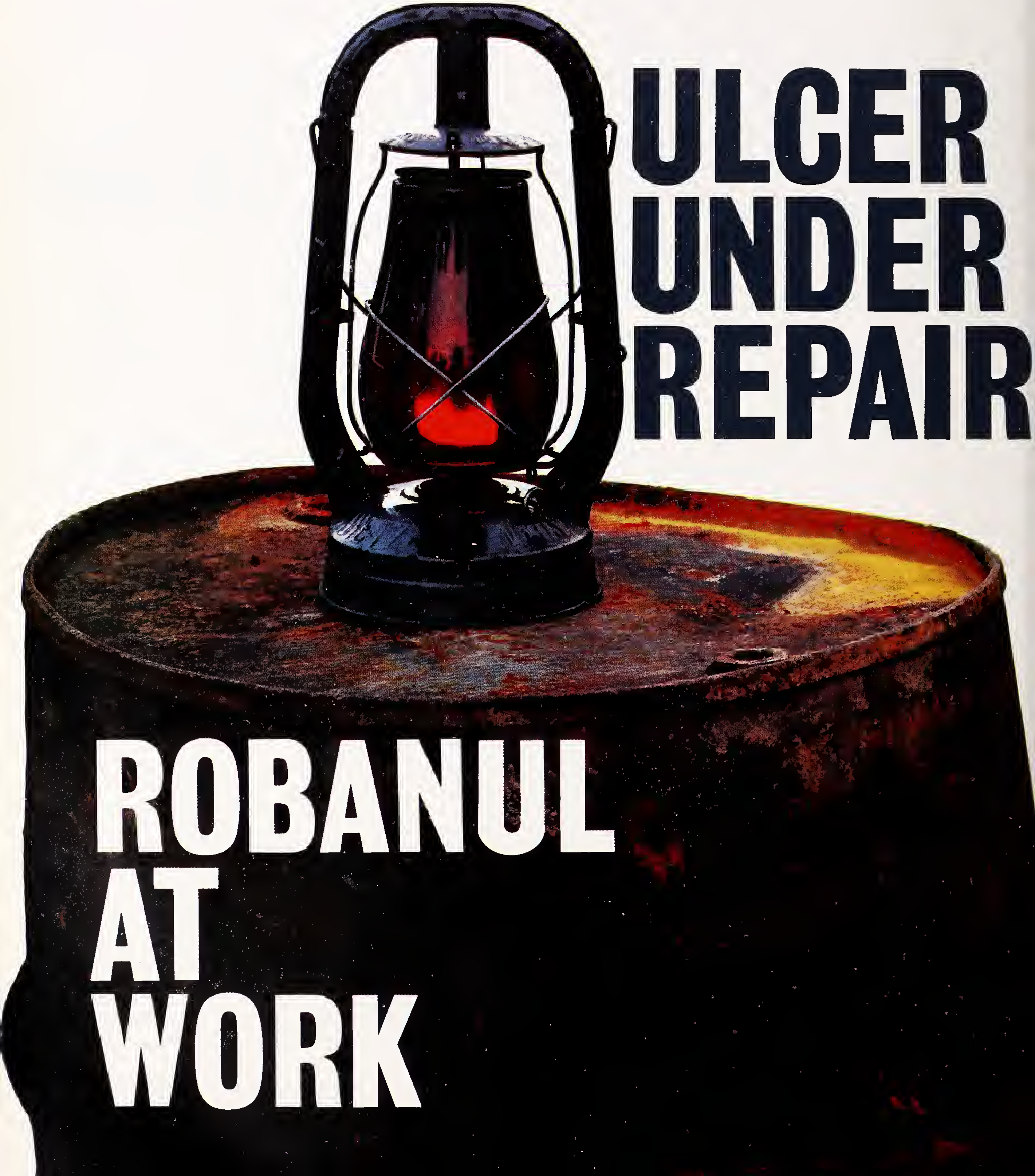
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New
Robanul™ signals a major improvement in duodenal ulcer therapy

From Robins research comes Robanul (generically, Glycopyrrolate), first of the "rigid-ring" anticholinergics, representing what may well be the most important advance in anticholinergic chemistry in a decade.

Clinically, both Robanul and Robanul-PH (with phenobarbital) have demonstrated a remarkable ability to provide within 90 minutes—and maintain for 6 to 10 hours—those nearly ideal pharmacologic healing conditions that mean prompt relief of ulcer pain and a successful recovery of your ulcer patient.

There are always important questions about any new therapeutic agent. Below are answers to some of the common ones asked about Robanul:

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ROBANUL™-PH

Robanul with phenobarbital,
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First of all, what does "rigid-ring" mean?
Briefly, this: it describes the use of a fixed pyrrolidine pentagon, or rigid ring, which guarantees a constant 2-carbon distance between reactive parts of the molecule. In line with the "receptor site" concept of the mechanism of action of anticholinergics, this almost inflexible molecule is theoretically more likely to "fit" only certain receptor sites.

Theories are all right, but is Robanul really more selective?
Yes! Evidence of its selectivity can be seen by the surprising lack of typical secondary anticholinergic effects (dry mouth, blurred vision, etc.) that occur at the effective dosage level of 1 to 4 mg. a day. Out of 499 duodenal and gastric ulcer patients treated at this level in investigative studies, only 4.4% had complaints of moderate to severe effects.

How is it for reducing gastric acid?
One investigator[1a] found that a 2 mg. dose of Robanul lowered acid secretion 73% in one hour (compared to a basal-hour period) and 84% in two. A 4 mg. dose dropped secretion over 94% in one hour and 97% in two!

What about acidity, or concentration of acid?
In one study, glycopyrrolate produced significant suppression of pH to 4.5 or higher in 5 of 5 duodenal ulcer patients given a 4 mg. dose, 7 of 8 patients given 2 mg., and 4 of 5 patients given 1 mg.[1b]

Will Robanul depress gastric hypermotility?
In another study[2] with six subjects Robanul decreased gastric motility in every patient. Within 40 minutes after the administration of 2 mg. of Robanul, the frequency of gastric antral contractions decreased from 1 every 24 seconds to only 1 every 2½ minutes. Young and Sun[1c] found a similar effect. Moreover, their results in 7 patients indicated that Robanul, in a dose of 2 mg., did not produce delay in gastric emptying or intestinal transit.

What's the best dosage schedule for Robanul?
It should be adjusted for each patient, and this is where Robanul offers another big advantage. Its "titratability" is unmatched among anticholinergic agents. Robanul's potency makes possible a recommended starting dose of only one milligram t.i.d. Yet its selectivity usually permits much leeway for dosage adjustment upward as necessary, to achieve the most effective dose level for each patient while maintaining a low incidence of undesirable effects on other organ systems.

Is there anything else Robanul does for peptic ulcer?
Much more! For instance, 2 mg. cuts pepsin production about 50% in two hours; 4 mg., about 65%.[1a]...There is evidence that Robanul combats hormonal aspects of gastric secretions as well as vagal in many patients... ...Its activity lasts long enough to reduce acid secretion all night long.[3]... Many ulcer patients have remarked about its fast relief of pain....

One last question: Why not prescribe Robanul for your next duodenal ulcer patient and see for yourself just exactly how effective it is?

References: 1. From the New York Academy of Sciences, Conference on Peptic Ulcer, Oct., 1961. (a) H. C. Moeller. (b) D. C. H. Sun. (c) R. Young and D. C. H. Sun. **2.** W. C. Breidenbach: Investigative clinical report, March, 1961. **3.** I. A. Feder: Investigative clinical report, May, 1961.

Additional information upon request.

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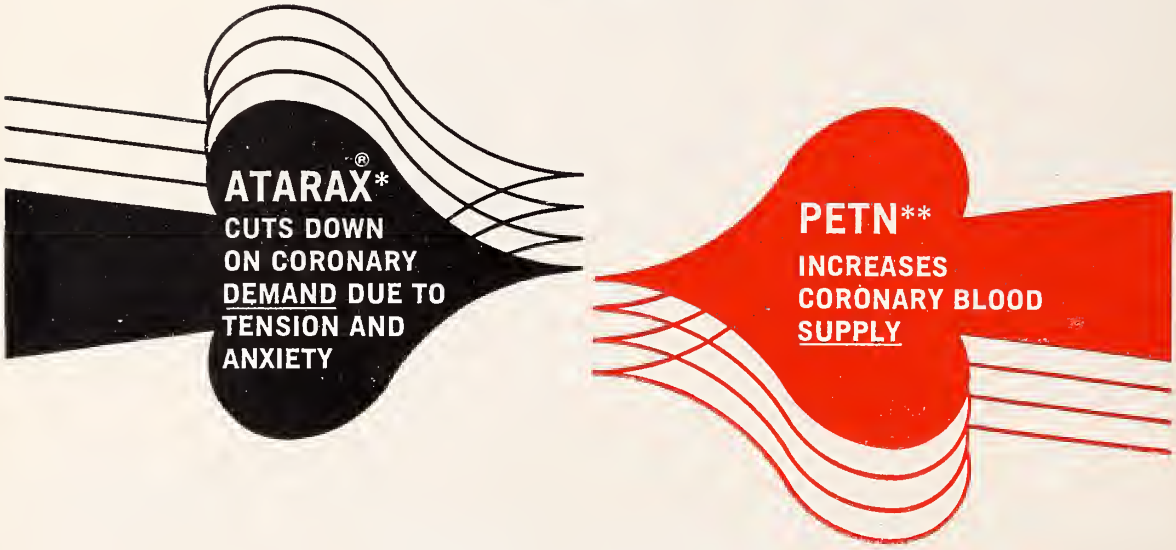
HOW CARTRAX® OFFERS BETTER PROTECTION AGAINST ANGINA PECTORIS THAN VASODILATORS ALONE: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PETN**
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they decrease "length, severity, and amount of angina pectoris" in anxious cardiacs.[1]

Give your angina patient better protection by balancing supply and demand...with CARTRAX.

note: Should be given with caution in glaucoma.

dosage: Begin with 1 to 2 yellow CARTRAX "10" tablets (10 mg. PETN plus 10 mg. Atarax) 3 to 4 times daily. When indicated, this may be increased by switching to pink CARTRAX "20" tablets (20 mg. PETN plus 10 mg. Atarax). For convenience, write "CARTRAX 10" or "CARTRAX 20."
Supplied in bottles of 100. Prescription only.

1. Clark, T. E., and Jochem, G. G.: Angiology **11**:361 (Aug.) 1960.

*brand of hydroxyzine **pentaerythritol tetranitrate

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Guide

MEDICAL POLICIES

for

LOCAL PUBLIC HEALTH NURSING SERVICES

This guide for medical policies has been jointly agreed upon by the Public Health Nursing Committee of the Minnesota State Medical Association and the Section of Public Health Nursing, Minnesota Department of Health. It should be stressed that it is a guide and should be discussed locally, adapted to local situations and approved by local physicians.

Preamble

A public health nursing program for any community includes:

1. Part-time home nursing care and rehabilitation nursing for the sick and disabled.
2. Health guidance for families.
3. Particiaption in community measures to prevent disease.

In addition to part-time home nursing care service, the public health nurse offers health guidance to the entire family. She serves families through the home, school, at work and in clinics. She has contacts with many persons who are not ill but who might benefit by health instruction and health guidance.

When a community provides public health nursing services, they are available to everyone rich or poor and without regard to race, color or creed.

Another principle of sound public health nursing organization is that the public health nursing service maintain liaison with the organized medical society. This may be accomplished in a variety of ways. The public health nursing service may appoint a medical advisory committee which includes representatives of the local medical society, medical specialty groups and health officer group. Another way of accomplishing liaison is through the physician on the pubic health nursing board. He can carry the thinking of the medical group to the board and interpret the public health nursing program to the other physicians. Written medical policies for the agency should be prepared and signed by the physician on the nursing board or the members of the medical advisory committee.

Functions of the Physician

To discuss, interpret and recommend medical policies to be followed by the nursing staff.

To make recommendations to the Board regarding the initiation and continuance of special phases of the agency's program that involve medical consideration.

To prepare, assist with the preparation of, or approve any publicity that involves medical information or that is to be sent to physicians; and to help with the selection of medical speakers for annual and public meetings.

To act as liaison between the public health nursing service and the medical society.

To interpret the functions and services of the public health nursing agency to the members of the medical society.

To approve the content and frequency of health examinations of the public health nursing staff and during employment and to advise regarding a health program for the staff.

Suggested Medical Policies

Medical direction

Except under highly unusual circumstances, public health nurses are not expected to answer to the directions of persons other than licensed physicians and surgeons. They may, however, carry out

CONTINUED

once again, an active hand in "doing"—

PABALATE®

Robins mutually potentiating nonsteroid antirheumatics

"superior to aspirin"[2] and with a "higher 'therapeutic index'"[1]

When sodium should be avoided—

PABALATE®-SODIUM FREE

When conservative steroid therapy is indicated—

PABALATE®-HC

Pabalate with Hydrocortisone

In each yellow enteric-coated PABALATE *tablet:*

Sodium salicylate (5 gr.) 0.3 Gm.

Sodium para-aminobenzoate (5 gr.) 0.3 Gm.

Ascorbic acid . . . . . 50.0 mg.

In each pink enteric-coated PABALATE-SODIUM FREE *tablet:*

Same formula as PABALATE, with sodium salts replaced by potassium salts.

In each light blue enteric-coated PABALATE-HC *tablet:*

Same formula as PABALATE-SODIUM FREE, plus hydrocortisone (alcohol) . . . 2.5 mg.

---

1. Barden, F. W., et al.: J. Maine M. A. 46:99, 1955.
2. Ford, R. A., and Blanchard, K.: Journal-Lancet 78:185, 1958.

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Making today's medicines with integrity . . . seeking tomorrow's with persistence.

nursing procedures under the orders of other licensed health practitioners when such orders are within the limits of the practitioner's licensure and compatible with the role of the public health nurse. Families who request service and present orders written by a physician whose status cannot be determined will be referred to a local physician for verification of order.

Number of visits to be made when no physician is in attendance.

No more than two visits shall be made to an ill patient to give nursing care using emergency standing orders when the patient is not under the care of a physician.

Chronically ill patients shall be seen by a physician at least every six months if nursing service is to be continued.

Selecting a physician

If there is no physician, the family is urged to select and call one and an explanation is made that the nurse cannot continue care except under a physicians directions. When families do not know the names of doctors in a community, nurses may give them a list of at least three local doctors. In an emergency where the patient cannot indicate and the family and family physician cannot be reached, public health nurses may call the medical representative on the nursing board, a member of the medical advisory committee or the health officer for help.

Obtaining medical orders

The public health nurse rendering bedside nursing care and rehabilitation nursing services to acute or chronically ill persons at home shall obtain written orders directly from the physician. If verbal orders should be followed when there is need for immediate action, these must be verified in writing as soon as possible for inclusion in the patient's record. This holds true also for Registered Nurses and Licensed Practical Nurses working with public health nursing direction.

Renewal of medical orders

Written medical orders must be renewed at least every three months.

Content of medical orders for drug therapy

Orders for medications must include the following information: diagnosis of patient, the name of the drug, exact dosage, frequency and method of administration and any precautions necessary. The nurse may accept verbal orders if arrangements are made to have them in writing by the next day. The administration of one dose of insulin upon direct verbal order of the physician is included in this policy.

Policies regarding injections

Nurses are permitted to give intradermal, subcutaneous and intramuscular injections on written orders from the physician. Families may be instructed to give subcutaneous and intramuscular injection on written request of the physician.

The nurse may *not* give intravenous injections, shots for colds, or immunizations, sera, drugs which may commonly cause severe reactions. The physician on the nursing board or a member of the the medical advisory committee will be consulted about requests for injections of any questionable drugs.

Supervision of auxiliary nursing personnel

At such times as the services of licensed practical nurses, nurses aides, or homemaker services are indicated, the public health nurse will plan accordingly with the family and the family physician. However, the public health nurse will continue to assist such workers and the family on the basis of need. The public health nurse, after consultation and in cooperation with the family physician, may refer patients to the local public and private health and welfare agencies.

Clinics

The nursing service will participate in clinics and/or other health activities which involve medical service only if the approval for and the responsibility of helping plan and conduct such programs is assured by the local physicians and county or area medical societies.

Records

Records of nursing services to individuals or families are kept in a confidential file in the office of the local public health nursing agency. The nurse plans with the family and referring physician for on-going communication in the interest of total cooperative care for the patient.

Suggested Standing Orders

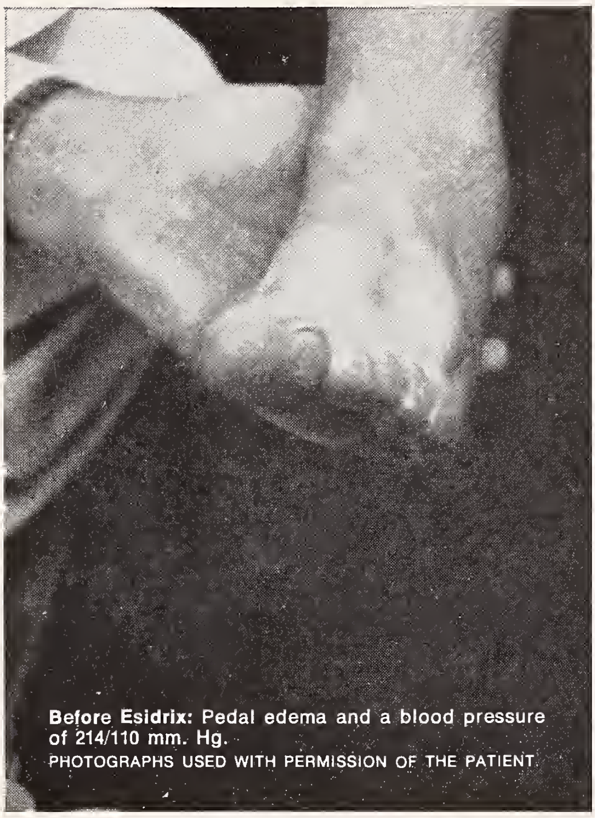
Standing orders are to used in instances where the physician's orders are not immediately available. They authorize and define what emergency care may be given until medical care can be obtained. The following orders are used only until the nurse can get in touch with the physician.

New patient

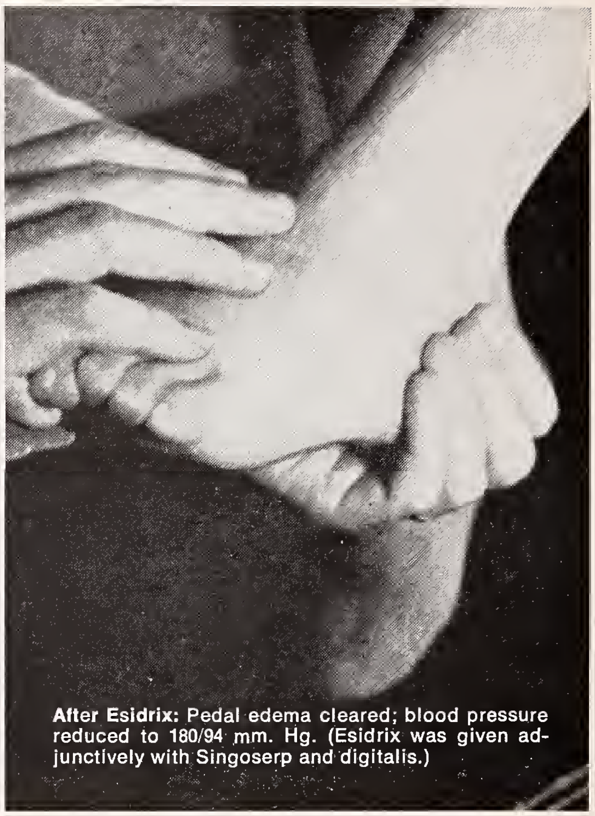
Bathe and make patient confortable. Instruct family as to care.

CONTINUED

measurable benefits in edema and hypertension



Before Esidrix: Pedal edema and a blood pressure of 214/110 mm. Hg.
PHOTOGRAPHS USED WITH PERMISSION OF THE PATIENT



After Esidrix: Pedal edema cleared; blood pressure reduced to 180/94 mm. Hg. (Esidrix was given adjunctively with Singoserp and digitalis.)

plus more built-in potassium protection than any other diuretic-antihypertensive

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50/1000 Tablets

Supplied: ESIDRIX-K 50/1000 Tablets (white, coated), each containing 50 mg. Esidrix and 1000 mg. potassium chloride (equivalent to 524 mg. potassium).

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For complete information about Esidrix and Esidrix-K (including dosage, cautions, and side effects), see current Physicians' Desk Reference or write CIBA, Summit, N. J.

ESIDRIX® (hydrochlorothiazide CIBA)
SINGOSERP® (syrosingopine CIBA)

C I B A Summit, N. J.

2/2989MK

Burns

Apply sterile dressing to superficial burns. If burns are severe, advise and help arrange immediate medical care. If transportation of the patient is indicated, extensive burns may be covered with a sheet. Avoid use of ointments.

Surgical Dressings

Dressings may be reinforced.

Minor abrasions and cuts

Wash with soap and water and cover with clean dressing.

Varicose Ulcers

Cleanse; apply sterile dressing and bandage firmly.

Sore throats and Colds

Isolate, urge fluids.

Suspected communicable diseases

Isolate and give nursing care and instruction as indicated. If family refuses to call physician, notify local health officer.

Discharging Ears

Clean outer ear with swabs moistened with boiled water. Dry throughly. Do not irrigate. Urge prompt medical attention.

Accidents

The nurse will limit herself to those accepted procedures described in the American Red Cross First Aid Handbook. Medical care should be arranged for immediately.

Suggestions About Program

In working with mothers in the maternity cycle, the public health nurse helps women seek early and continuous medical care and offers health counseling around the physical and mental health needs which they have. The public nurse secures orders from the individual physicians for treatment and nursing procedures to be carried out for their patients.

In communities where the public health nurse conducts expectant parents classes, it is only with the approval and active support of the local physicians.

Health of Infants and Preschool Children

The public health nurse can be most helpful to a mother if she can visit her within the first 48 hours after discharge from the hospital as this is often the time she is feeling the most insecure in the care of her baby. In the case of the prematurely born infant, referral of the family before the baby is discharged provides an opportunity for the public health nurse to help them prepare for baby's arrival.

The value of continuous medical health supervision and appropriate medical services for the infant and preschool child should be stressed. This health supervision includes determination by medical examination of the health status of the child and deviation from nomal; immunization against such disease as diphtheria, pertussis, smallpox, tetanus and poliomyelitis; and counseling in all phases of infant and child care and growth and development. The public health nurse supplements the instruction given by the physician and elaborates on such details as techniques of food preparation and feeding, daily care of the infant, good hygiene practices, habit training, accident prevention, etc. She also helps families follow through on the physician's recommendations.

Health of School Children

School health services are under the administrative direction of the school administrator. The *School Health Manual* should constitute the base upon which programs for the health of school children are constructed. The public health nurse has a nursing contribution to make to the total school health program. She gives public health nursing service in schools upon request and in accordance with priorities set by her administering body. She works with parents on problems of child health, guiding them to the sources of aid needed and she is a resource person on matters of nursing for school staff, physicians and dentists who arrange for and conduct health programs.

The public health nurse as she works in schools aids in the control of communicable disease by helping parents and teachers recognize conditions for which the child should be isolated. It is well recognized that teachers and parents are in the best position to observe the child day by day and so note changes in him. Primary responsibility for exclusion of sick children is fixed by Minnesota State Board of Health Regulation number 318 which reads:

> **"The person in charge of a school shall exclude from school all children who (a) return to school after an illness of unknown cause, (b) appear to be in ill health, (c) have lice or other vermin. The parents of such children shall be notified of the reason for exclusion and such cases shall be referred to the family physician, the school physician or the health officer. Children shall not be readmitted until they obtain a certificate from the health officer or his authorized agent."**

CONTINUED

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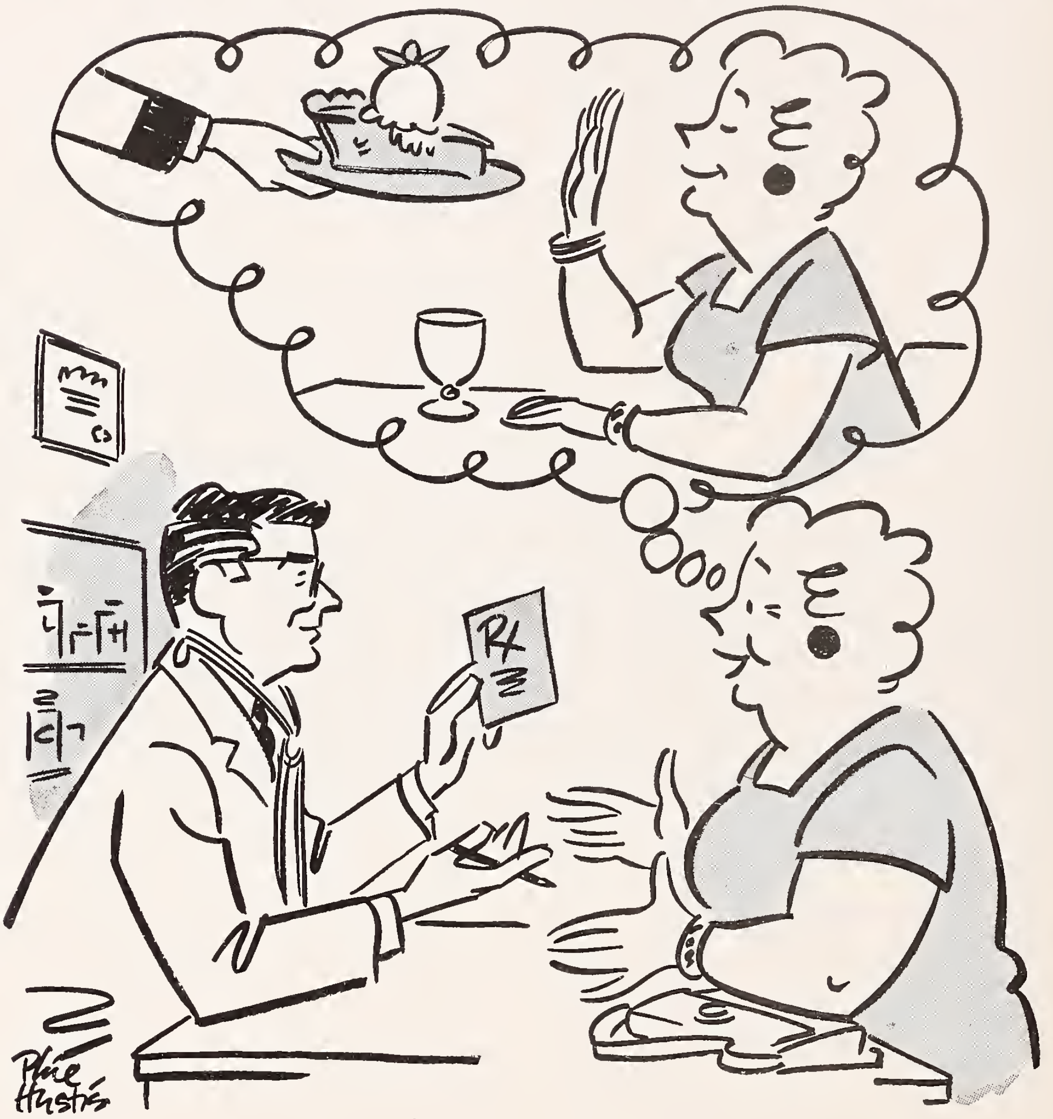

Controls food craving, keeps the reducer happy — In obesity, "our drug of choice has been methedrine . . . because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West.J.Surg. 59:238 (May) 1951.

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Literature available on request.

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THIRTEEN CENTURIES AGO, ACID HYPERSECRETORS

ATE EARTH FROM THE ISLAND OF SAMOS,*...BUT

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*Smith, L. A., and Rivers, A. B.: Peptic Ulcer, New York, Appleton-Century-Crofts, 1953, p.

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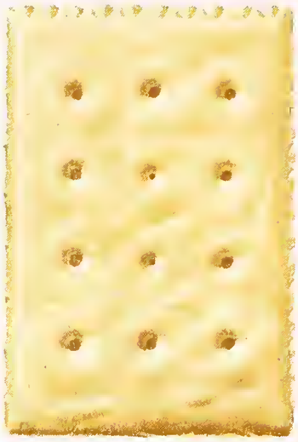

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in a uniquely palatable form**

- form and flavor of delicious baked wafers
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- rarely interfere with bowel function

Composition: Each therapeutic unit (one wafer) contains 500 milligrams combined calcium carbonate and magnesium trisilicate, with added milk solids, incorporated in a crisp, oven-baked wafer.

Supplied: In boxes of 60 wafers.

Dosage: 1-2 wafers between meals, as needed, or as directed by physician.

Convenient for the working patient: Wafers are contained in pocket-sized, moisture-proof sealed packettes.

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Crippled Children Services

The prevention and correction of physical handicaps due to bodily defects often demand medical supervision over long periods of time. The public health nurse works with the individual physician in the care and supervision of these patients. She works with State Crippled Children Services in accordance with the private physician's plans for care of the child.

The public health nurse in her work with families and in the community may be the first to learn of deviations from the normal in the child's growth and development. She encourages medical care and supervision and helps the family understand and follow medical recommendations. Selected early referral by physicians to the public health nursing service is encouraged especially when the child presents a nursing care problem to the family or when the parents can use help in adjusting to the child's condition.

The nurse's duties in the individual case lie in helping the family accept the diagnosis, plan for care and carry through on the physician's recommendations. She helps family members with nursing care including rehabilitative aspects and works with related disciplines and agencies so that total services can be better coordinated.

Communicable Disease Control

Although the public health nurse does not initiate disease control programs, she does work with physicians and volunteers in planning and conducting such clinics as the community or schools and local physicians deem necessary. She helps people to understand disease control and prevention including immunization against preventable diseases. When a communicable disease exists, the nurse takes an epidemiological approach and with medical direction, helps the family with measures that prevent spread and with plans for needed examinations and follow-up. The public health nurse works closely with the local health officer who is responsible for enforcing all laws, regulations, ordinances and resolutions concerned with the public health.

Tuberculosis Control

The public health nurse contributes to the control program primarily through her work with the family. She is often able to bring a suspected case of tuberculosis to the attention of the physician.

After the doctor has informed the family of the diagnosis and made his recommendations, the public health nurse's service to the family includes helping them understand the disease; nursing care services to patient in the home; taking steps to prevent the spread of tuberculosis and helping the patient and family make necessary adjustments.

If drug therapy is to be given a patient by the nurse, she should first secure from the supervising physician specific written instructions for her guidance.

In relation to tuberculin testing programs, the public health nurse's time is best devoted to the follow-up of reactor and their families. In many instances, several visits are necessary to help the reactor and family seek medical care.

Nursing Care of the Sick in the Home

The public health nurse works closely with the physician and helps the family to understand and carry out his instructions. All sick people and their families have some nursing needs. They may need personal care, rehabilitative nursing measures, guidance toward self-help and some degree of emotional support. The public health nurse may give nursing care herself, at the same time teaching the family how to give care, or she may help the family locate assistance from inactive nurses or other persons in the community. Registered Nurses and Licensed Practical Nurses work in homes under the supervision of the public health nurse in some communities.

The public health nurse works with adequate and up to date medical policies and standing orders as described in preceding paragraphs.

Mental Health

Emotional health cannot be separated from physical health and so is a part of all public health nursing programs. For example, preventive mental health services include helping parents understand normal growth and development and establish a climate which allows for the healthiest physical and emotional development at all ages. In situations where there is mental illness, the public health nurse can help the patient seek medical care and work with the family in understanding and accepting mental illness. Supportive public health nursing services to patients discharged from mental hospitals are offered when there is psychiatric consultation available to the public health nurse.

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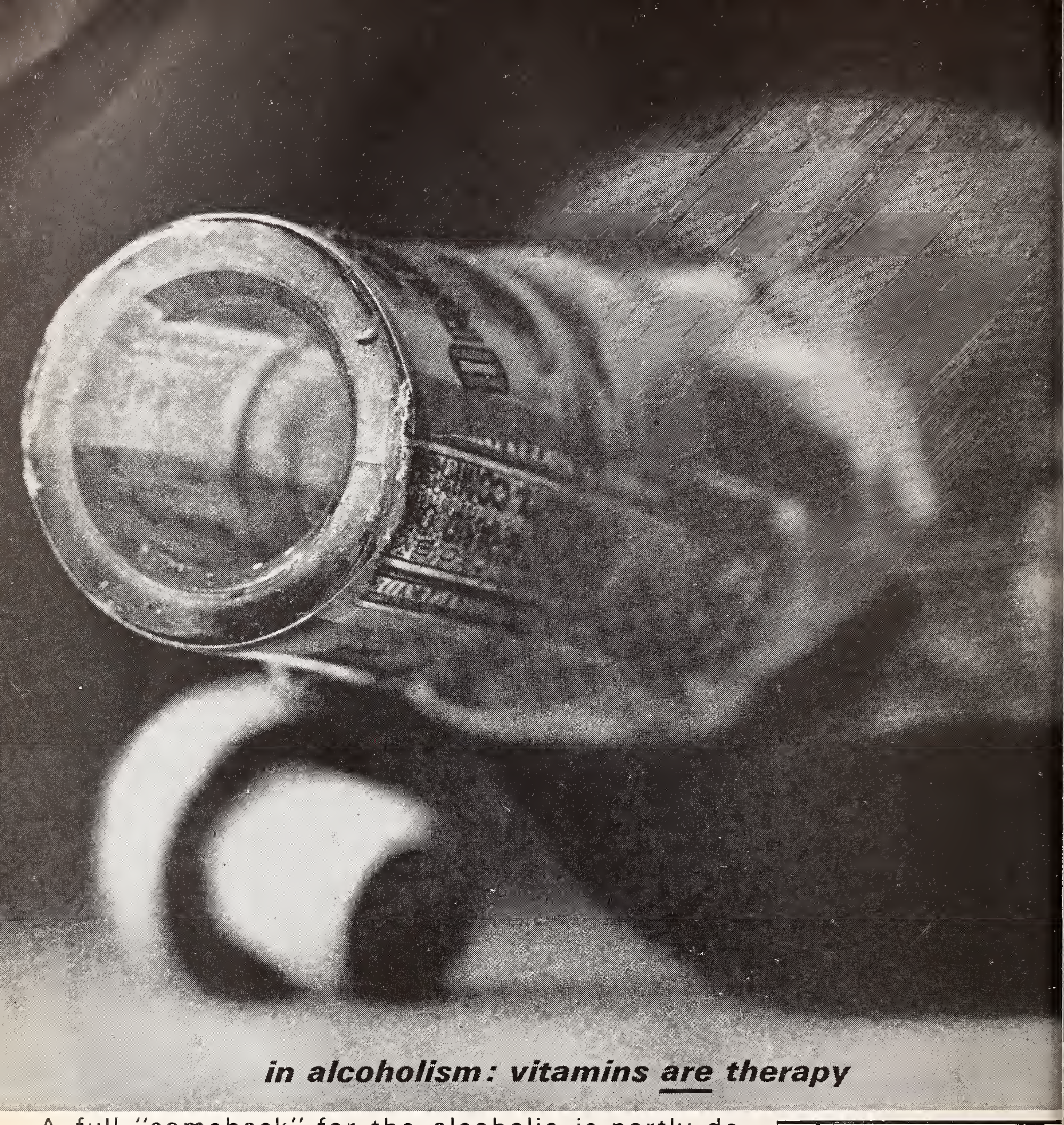

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Each capsule contains:	
Vitamin B_1 (Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Niacinamide	100 mg
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Recommended intake: Adults, 1 capsule daily or as directed by physician, for the treatmen of vitamin deficiencies.

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Carl H. Woyke
Editor

MINNESOTA STATE MEDICAL ASSOCIATION PUBLIC RELATIONS INSTITUTE RECEIVES NATIONAL ATTENTION

The "PR Doctor," published by the Communication Division of the American Medical Association, reviewed the Minnesota State Medical Association Public Relations Institute in its January issue. The "PR Doctor" is mailed each month to county and state medical societies for the purpose of exchanging public relations ideas. The following is the report which appeared in the "PR Doctor."

MINNESOTA REKINDLES PR SPARK WITH MDs

Confronted with continuing legislative crises, many medical societies have sacrificed long-range public relations goals in favor of short-range legislative battles. Minnesota physicians recently provided a forceful reminder, however, that tomorrow's legislative battles can be won only if doctors do the necessary public relations spadework today.

In late October, the Minnesota State Medical Association held its first Public Relations Institute in Minneapolis centered about the theme, "Doctor, Your Public Relations Is Showing!" In a series of really outstanding presentations, physicians, newsmen, and medical organizational representatives laid it on the line to physicians on medical press relations, doctor-patient relations, essential county society public service programs and encroaching government medicine.

. . . Why an Institute

The Public Relations Institute evolved from an obvious need to tell a better story about medical services and accomplishments to both public and profession, according to MSMA executive secretary Harold W. Brunn. It also was designed to stimulate new leadership among local doctors.

Reluctance of physicians to speak up in their communities on crucial issues facing medicine prompted panels on medical press relations. Explained Brunn: "Several times we tried to get doctors to speak before civic groups on medical aid for the aged; they were reluctant to take part. Though they were enlightened men, they feared such appearances would be considered 'advertising' by their colleagues." To set MD members straight on ethics as its relates to a physician's educational responsibilities the Minnesota society lined up a panel including newsmen from newspapers, radio and TV. Here's a brief report on what the "experts" told MDs in this panel and others that followed:

. . . About Press Relations

"Though there has been an improvement in doctor-press relationships in the past ten years, the problem isn't getting spot news but is keeping the public informed on new developments and research. Doctors fear premature release, newsmen's inabiliy to tell a story accurately, and above all, criticism of colleagues." . . . "Our stories won't be accurate unless reporters talk to us — as understanding workmen in an allied field rather than screaming 'Dolce Vita' type reporters." . . . "Press codes work in direct proportion to amount of time and effort put into them by doctors and the press. Meetings are still needed from time to time to shore up our efforts.

CONTINUED

In oral penicillin therapy
COMPOCILLIN-VK
offers the speed, the certainty,
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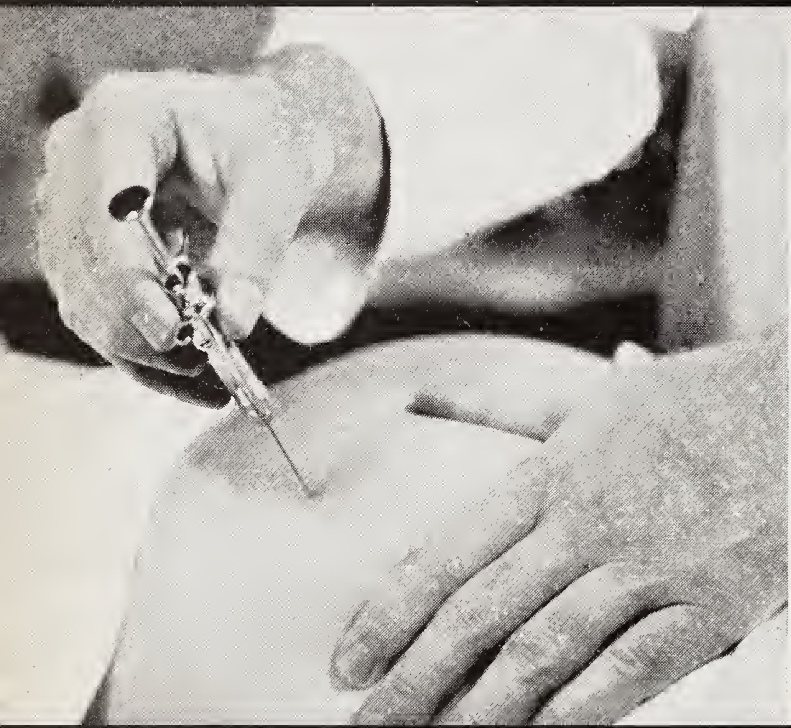

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IN ORAL PENICILLIN THERAPY

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POTASSIUM PENICILLIN V

BECAUSE potassium penicillin V (Compocillin-VK) offers excellent absorption[1,2,3,4]—fast, predictable levels of antibacterial activity enter the blood stream and quickly reach the site of infection. *Absorption takes place high in the digestive tract and is virtually unaffected by gastric media.*

Antibacterial levels are so predictable that, in many cases, *Compocillin-VK may be prescribed in place of injectable penicillin.* This is especially appreciated by younger patients and—as you know—oral administration is considered far safer than injectable.

Compocillin-VK is well tolerated and may be used in treating mild, severe, and in high dosage ranges, even critical cases involving penicillin-sensitive organisms. It comes in stable, palatable forms for every patient—every age.

There are tiny, easy-to-swallow Filmtab® tablets—125 mg. and 250 mg. (200,000 units and 400,000 units), a tasty, cherry-flavored suspension (each 5-ml. teaspoonful contains 125 mg.) and two combinations (Filmtab and suspension) with the triple sulfas. Depending on severity of infection, dosage for Compocillin-VK is usually 125 mg. or 250 mg. three times a day. Won't you try Compocillin-VK?

1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193. **2.** J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, A Trial of Penicillin V, *Brit. M. J.*, July 27, 1957, p. 193. **3.** J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957. **4.** W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxymethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.

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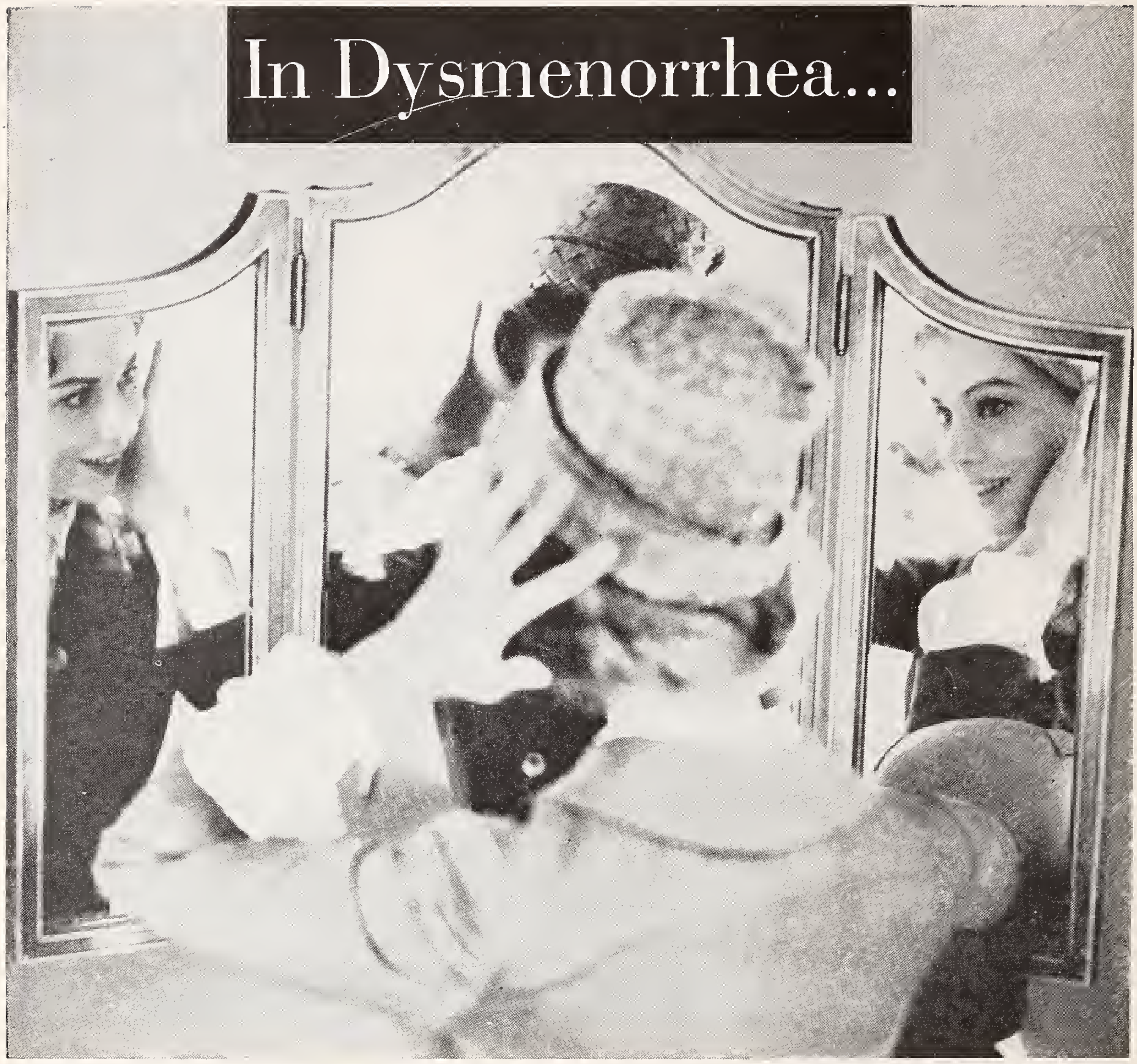

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Trancoprin is more than a simple analgesic: It deals with cramping pains in three ways. Besides dimming pain perception, Trancoprin, through its tranquilizing action, reduces anxiety and raises the tolerance for discomfort. And, against the spasm caused by pain which, in turn, produces more pain, Trancoprin exerts its skeletal muscle relaxant action.

Trancoprin is exceptionally safe to use: Fewer than two and a half per cent of patients can be expected to have any side effects, and these are of a minor nature.

Available in bottles of 100 tablets. The usual dosage in dysmenorrhea is 2 tablets 3 or 4 times daily.

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"We'd like a briefing about what's new in medicine from time to time to spark ideas from which we could develop factual, dramatic and fascinating stories for the public: We want to visit research labs, medical centers, and hospitals and we'd like to have your medical students spend a little time in our newsrooms to see how we work" . . . "Doctors, your public relations have bogged down. You let people say all kinds of things about you, but you don't counter the report with your own story. Why not run ads to tell people your story? Lack of MD cooperation with suburban newspapers is pathetic."

. . . About doctor-patient relationships

In an outstanding talk on this subject, Dr. H. B. Sweetser pointed out that public relations understanding is needed by both doctors and patients. Patients need to know what the doctor wants and is looking for and the doctor must understand what the patient wants and needs. Listing specific directions for enhancing the doctor-patient relationship. Dr. Sweetser said each doctor should ask himself: "Has the patient received full satisfaction from this visit — and does he know he has received it?" He emphasized the innate dignity of man as the basis of this all-important relationship.

. . . About government medicine

Dr. Richard Fliehr said it was shocking that medical societies haven't done a better job of educating the public to the merits of the Kerr-Mills program as opposed to the administration-backed King-Anderson Bill. Even doctors, he said, haven't taken time to inform themselves fully on the issues involved.

Said Dr Fliehr: "Doctors can't afford the luxury of the old cliche that they can't bother with medical politics." They must abandon ingrained reticence about public relations, he said, and talk to patients, friends and public about the importance of preserving our system of private medicine.

Summing up the doctor's responsibility, Dr. Arnold O. Swenson observed: "We must ask ourselves if we have really been as conscientious in the doctor-patient relationship, in the fight against government medicine, and in efforts to educate the public as we might be."

"DOCTOR, TELL ME" PROGRAM PARTICIPANTS JANUARY 1 THROUGH MARCH 30 ARE AS FOLLOWS:

January 1- 5	Dr. James Rogers Fox, Minneapolis, Internist
January 8-12	Dr. Richard R. Fliehr, Minneapolis, Obstetrician and Gynecologist
January 15-19	Dr. Louis L. Flynn, St. Paul, Child Psychiatrist
January 22-26	Dr. Robert J. Richardson, Minneapolis, Otolaryngologist
January 29-February 2	Dr. John A. McNeill, St. Paul, Ophthalmologist
February 5- 9	Dr. Edward H. Kelly, St. Paul, Orthopedist
February 12-16	Dr. Donald W. Hastings, Minneapolis, Psychiatrist
February 19-23	Dr. James Rogers Fox, Minneapolis, Internist
February 26-March 2	Dr. Richard R. Fliehr, Minneapolis, Obstetrician and Gynecologist
March 5-9	Dr. John A. McNeill, St. Paul, Ophthalmologist
March 12-16	Dr. Donald W. Hastings, Minneapolis, Psychiatrist
March 19-23	Dr. Robert J. Richardson, Minneapolis, Otolaryngologist
March 26-30	Dr. Edward H. Kelly, St. Paul, Orthopedist

END

Put your low-back patient back on the payroll

Soma relieves stiffness
–stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

> Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A. M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. USUAL DOSAGE: 1 TABLET Q.I.D.

The muscle relaxant with an independent pain-relieving actio

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Medicine
IN WRIGHT COUNTY

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

The territory now included in Wright County is an area approximately 30 by 36 miles across, at the North end of what was, in territorial days, known as the "Big Woods of Minnesota." The Mississippi forms the north and northeast border, and the Crow river that on the east. The north fork of the Crow cuts across from the northwest, and joins the south fork just above Rockford, and goes on as the Crow, to Otsego, on the Mississippi, a very early settlement point. These streams formed the natural drainage for the area, and also, it was along these streams, that the flow of immigration entered, and settlements first appeared. Carver County joins on the south and Meeker county on the west.

In pioneer days, the Big Woods area was considered to have the best farm lands in the state, land which accepted as collateral for loans made by insurance companies and large land companies. These facts hastened the opening and development of the area in the decade before the Civil War, and again after the war, when the Indian was expelled from the region and returning veterans made use of their homestead rights throughout the county. Hardy young families, of Northern European stock, predominated.

Early families came by boat up the Mississippi and walked in from Ft. Snelling, or points on the Mississippi, along Indian trails which usually followed streams and lakes. Later ox teams joined the parade through heavy hardwood forests, and settlements were established where the first doctors started to administer to the needs of the settlers.

Trails were brushed out, and narrow and winding dirt roads following the contour of the land, skirting lakes and swamps or any obstruction difficult to remove, took their place—allowing ox-hauled transport to move the traffic. About 1885, the ox suddenly gave way to the western horse (bronco), and speed jumped from one mile per hour to three or four, over the muddy roads. The horse and buggy day appeared for summer transport and the sleigh for winter. This transport prevailed through 1900, and the doctor was limited to about six miles per hour with a first class team. He had plenty of time to think along the road and plan his treatment, and also time to ponder over political situations, local and national. Many of the doctors were prominent political figures in the community and a source of political information to the countryside.

Every doctor had his experiences of slow travel over muddy trails or roads, just wide enough for one way traffic—mud in the summer and snow in the

CONTINUED

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GLYCAMINE is ideal therapy for ulcers and hyperacidity—*because:*

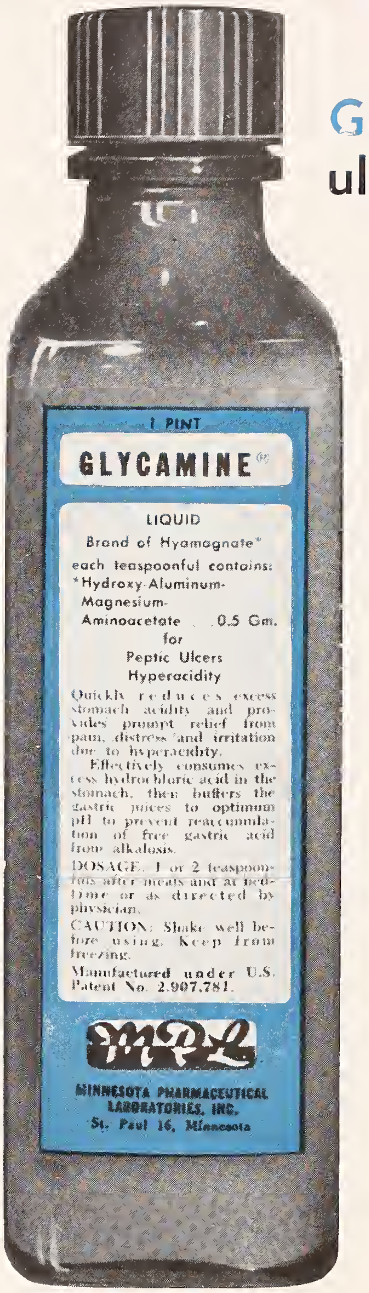
It returns digestion to normal, establishes and maintains an ideal pH range through controlled buffering.

Relief is instant and longer lasting—to 4½ hours. Dosage is smaller. Taste is pleasant, pleasing to patient's palate. Crunchy tablets or smooth, palatable liquid.

Tissue recovery is speeded by inclusion of amino nitrogen in formula. Mucosa coating assures protection and healing.

Greater acid absorption begins immediately, lasts longer, 4½ hours, and is controlled. No acid rebound or alkalosis.

Neither laxative nor constipation side effects exist. There are no known contraindications.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Peptic Ulcers
Hyperacidity
Quickly reduces excess stomach acidity and provides prompt relief from pain, distress and irritation due to hyperacidity.
Effectively consumes excess hydrochloric acid in the stomach, then buffers the gastric juices to optimum pH to prevent reaccumulation of free gastric acid from alkalosis.
DOSAGE: 1 or 2 teaspoonfuls after meals and at bedtime or as directed by physician.
CAUTION: Shake well before using. Keep from freezing.
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GLYCAMINE . . . Counteracts excess acidity and stabilizes gastric pH in the optimum range of 3-5. Does not stimulate accelerated acid secretion. Not laxative or constipating. A new chemical compound with no known contraindications or side reactions.

GLYCAMINE . . . Is easy to take, long lasting, economical: assures better patient cooperation.

USUAL DOSAGE: One or two pleasant tasting tablets (or teaspoonfuls of liquid) before or after meals and at bedtime.

AVAILABLE: Bottles of 100 and 500 tablets, liquid in pint bottles.

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winter. The winter roads took short cuts over frozen marshes and lakes, winding through woods to the settlers' homes. They were usually better roads than the summer dirt ones of mud holes and ruts through the narrow shady lanes where they never dried out. However, the heavy woods blocked the force of the winds and prevented the deep drifting that prevailed on the prairies or open stretches, giving some protection to the slow-moving, half-frozen doctor as he travelled the country-side.

There were no telephones, and the doctor was usually called by someone on foot or horseback, or later, by team, at any time of the day or night. This meant long hours of waiting in many cases, especially on obstetric calls. No medical consultation or help was available when sorely needed. The doctor had a small coal oil lamp or candle for light; grandmother was his best assistant; and the husband or other relatives were always there to ask why the doctor didn't do something instead of letting the patient suffer. To give chloroform with one hand and try to manipulate a birth with the other, in the semi-darkness, was a common occurrence. In most instances the doctor had never been consulted before the actual birth commenced and usually knew nothing of the physical condition of the patient, or any possible anatomical defects or abnormalities. Due to the fact that obstetrical cases are natural procedures, if the doctor had the patience and courage to pay no heed to surrounding condemnations for inactivity, most of the children were born alive and healthy. When interference occurred, the chances for trouble were increased tenfold. This is quite a picture compared to the present day delivery in a modern hospital where there are several nurses on duty in addition to a trained anaesthetist; where no immediate relatives are in the operating room urging immediate action; where oxygen and blood transfusions are available, and where the patient's general condition is known in advance. In former days more than one physician had the harrowing experience of a mother, shortly after childbirth, go into convulsions. The doctor then had to stay at the bedside, or perhaps return on his way home after paying a short visit to another patient.

These experiences are a thing of the past, but they had to be faced by the pioneer medical man. Fees were small and hard to get because of the generally poor financial condition of the early settlers and by reason of the lack of market and transportation. The doctor had to be an athlete, and a tough one, to withstand the rigors of the climate and the accidents of the road—upsets, runaways, etc. Two doctors in the County were killed at railroad crossings returning home from hard and tiring trips into the country with horse-drawn vehicles.

The pioneer doctor's life was one of fighting obstacles—physical and mental. There were innumerable inconveniences, and improvisions and makeshifts were needed at every turn. In the case of fractures and other serious injuries no x-ray was available for aid in diagnosis or for checking after-results. Transfusions of blood were unknown. Keen observation and a developed acute sense of touch, with experience, took the place of modern implements for diagnosis. A calm earnestness and a desire to do everything possible helped to allay fear, and gave courage to the stricken ones. What wonders today's doctors can do with modern equipment when imbued with the same spirit of devotion to duty and an active desire to do everything possible for the suffering patient. —This applies in every branch of medical and surgical practice. Earnestness and an ability to convey to the patient a feeling that the doctor cares and knows what

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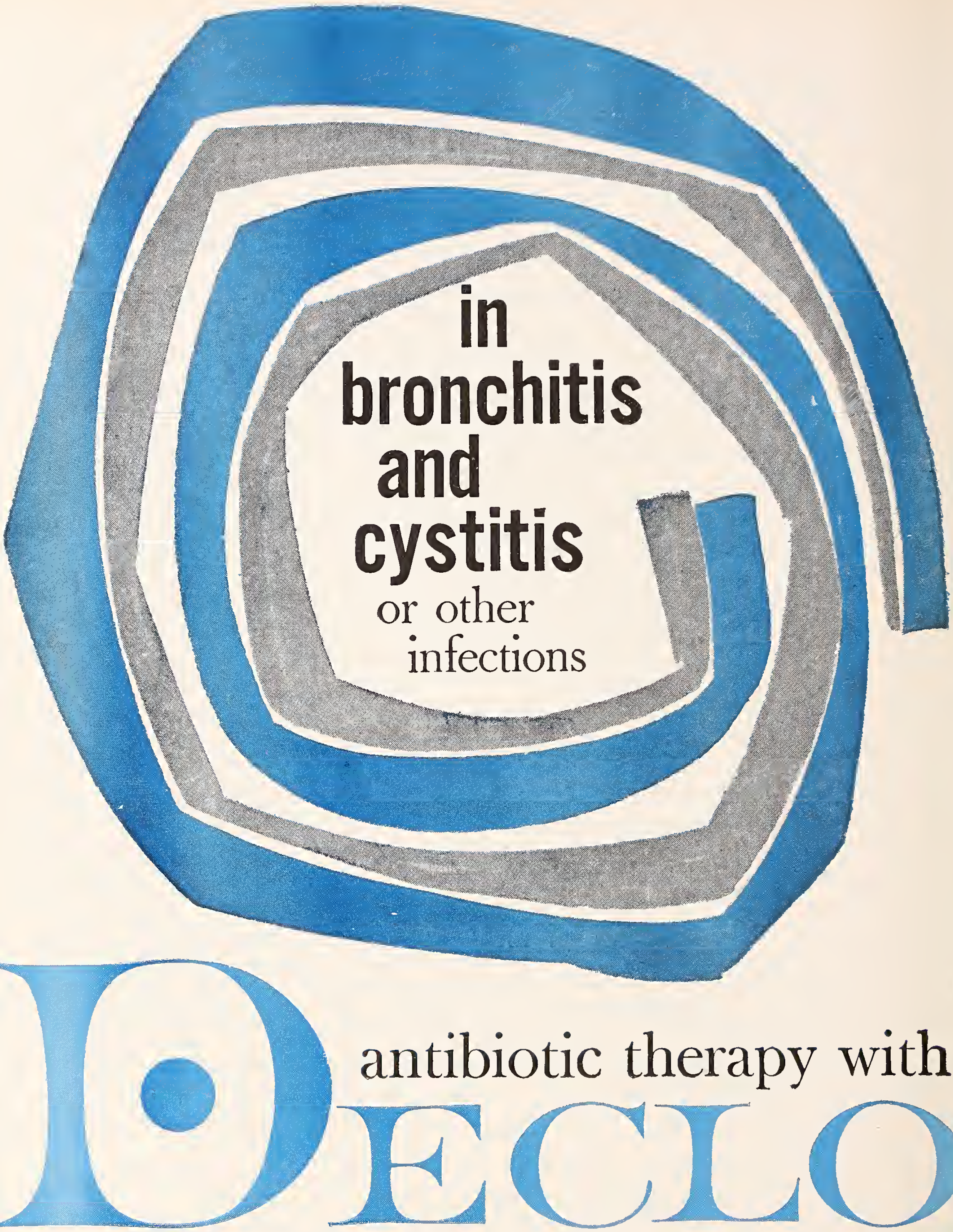

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CAPSULES, 150 mg., 75 mg. *Dosage:* Average infections—150 mg. four times daily. Severe infections—Initial dose of 300 mg., then 150 mg. every six hours.

PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. *Dosage:* 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into four doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored). *Dosage:* 3 to 6 mg. per pound body weight per day—divided into four doses.

PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics, and demands that the patient be kept under constant observation.

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against relapse—up to 6 days' activity on 4 days' dosage

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against "problem" pathogens—positive broad-spectrum antibiosis

he is doing, giving the patient a feeling of confidence and security is one of the best sedatives known and will often do more than drugs. Confidence and a personal interest in each case attended was the back bone of the success of all pioneer practitioneers—theirs was hard work, underpaid service, marked by inconvenience in every phase of their own private lives; a labor of love where Faith, Hope and Charity often worked wonders. Such were the pioneer physicians as I knew them, many personally, in my younger days.

Wright County was organized by the Territorial Legislature in St. Paul in 1855 and named after the Hon. Silas Wright, a politician of Orange County, New York. Buffalo was chosen as the County seat in 1867 and the present court house erected in 1887. Stone and brick were carted in by ox team before the railroad was built. Population of the County was 3,729 in 1860.

Railroads came into Wright County and opened up markets to the East, spurring settlement along their lines. The Great Northern Railway built west from Minneapolis, through Delano, Waverly, Howard Lake and Cokato, in 1869. The Soo Line Railroad built through Rockford, Buffalo, Maple Lake, Annandale, and South Haven in 1886. Many of the locomotives in early days were small two wheelers, burning wood from the surrounding forests. Some of the frequent accidents in those days were hand injuries by train men attempting to make couplings of old style link-connections, especially on a frosty morning.

The early towns were along the Mississippi—Otsego, Monticello, and Clearwater—and along the Crow—Hanover, Rockford, Delano and Watertown—just across into Carver County. These towns were soon connected by bad narrow roads along the rivers and following Indian trails. There was also a settlement on the north fork of the Crow—Kingston, just over into Meeker county.

The first doctor to settle in Wright County seems to have been Dr. J. D. Wheelock, who came to Clearwater on the Mississippi in 1855. Dr. Samuel Dexter Grant came to Minnesota in 1856, apparently settling soon in Delano. Dr. Resolve O. Cady was at Buffalo in 1862 and Dr. Sidney R. Wakefield at Monticello in 1866.

Before the Wright County Medical Society[1] was organized and kept alive there was another organization known as the Crow River Valley Medical Society, which first met at Howard Lake in 1883[2] and met again at Delano in 1884.[3] Dr. E. Y. Chilton was the first president, Dr. T. J. Catlin, the first vice president; Dr. L. H. Munger, of Fair Haven, second vice president, Dr. A. M. Davis, of Howard Lake, Recording Secretary, Dr. Wm. Ray, of Delano, corresponding secretary, and Dr. S. J. Wooster, of Rockford, Treasurer.

Anyone acquainted with the roads of Minnesota and the difficulty in getting over them in those days will appreciate why there were no records of meetings until the Society was reorganized as the Wright County Medical Society in 1894, and again in 1903.

The first recorded meeting of the reorganized society took place August 1, 1894.[4] Drs. T. J. Catlin and J. S. Shrader, of Delano; S. R. Wakefield, of Monticello; A. M. Ridgway, of Annandale; T. O'Connor, of Maple Lake; R. O. Cady, E. A. Shannon and F. B. Ilstrup, of Buffalo; P. O'Hair and F. M. Peironnet, of

CONTINUED

Waverly and E. Y. Chilton, of Howard Lake, were present. Dr. R. O. Cady was elected president.

There were no meetings or records for nine years when another meeting was called, July 1, 1903. Twelve doctors answered the call and organized again with E. Y. Chilton as president. Present were Drs., E. Y. Chilton, P. O'Hair, E. P. Hawkins, J. J. Catlin, J. P. O'Connor, T. O'Connor, R. F. Lynch, A. L. Hill, C. B. Powell, O. McKeon, G. M. F. Rogers, E. A. Shannon, and Theo. J. Catlin, Sr. In 1906, Dr. J. J. Catlin was elected Secretary, and there have been regular meetings of the Wright County Medical Society up to the present time. Dr. J. J. Catlin resigned as secretary in 1950, and Dr. Theo. J. Catlin, Jr., acted as secretary since then.

In the following pages all of the physicians who began to practice in Wright County prior to 1901 are listed alphabetically. It was unavoidable that some of the biographical sketches are very incomplete as the records for early practitioners are rather scant; many of the early pioneers spent only a short time in the county leaving only a very faint imprint on the medical development in the county.

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* Dr. J. J. Catlin, a son of the important pioneer physician of Wright County, Dr. Theodore Jefferson Catlin, commenced medical practice in Wright County in 1904 and knew personally many of the County's pioneer physicians. The general medical history of Wright County is entirely from his pen.

1. The history of the Wright County Medical Society was the subject of an address by Dr. E. Klavenon of Monticello before that Society October 8, 1929. It was published in the Journal Lancet, 49: 1929. pp. 522-525.

2. The first meeting (1883) reported in the minutes apparently was actually the second meeting held in the same year. This meeting took place in the parlor of the Jones Hotel in Howard Lake with Dr. Chilton as secretary *pro tempore.*

3. This meeting was held March 11, 1864 with Dr. Wm. Ray as secretary *pro tempore.* At this meeting the Articles and By-laws signed by Drs. Chilton, Catlin, Wooster, Munger, Ray, and Davis were adopted.

4. This meeting was called at the request of Dr. A. M. Ridgeway of Annandale, and was held at the American House at Buffalo. Dr. T. J. Catlin was nominated chairman *pro tem.* The group discussed the advantages of a medical society and the necessity of a hospital.

5. The volume containing the minutes of all meetings of the Crow River Valley and Wright County Medical Society from 1883 until 1935, also the original articles and By-laws, and the amended By-laws of 1905 have been deposited with the Minnesota State Historical Society.

TO BE CONTINUED

People always get what they ask for; the only trouble is that they never know, until they get it, what it actually is that they have asked for.—*Aldous Huxley*

"Remember that what you possess in the world will be found at the day of your death to belong to another, but what you are will be yours for ever."—*The Masonic Record*

"The first prescription I ever wrote was for 'Empirin' with Codeine...

and it is still my stand-by for pain relief today."

PICTURE THE YOUNG DOCTOR with his first private patient, about thirty-five years ago. This is the moment, after years of study and guidance in classroom and at hospital bedside, when he assumes the full weight of responsibility for the well-being of his patient. He makes his diagnosis. The patient is in considerable pain, and his first concern is to relieve this discomfort. He writes a prescription for a new analgesic, a convenient drug combination that he believes will be of help. This patient (and many others to follow) finds gratifying relief, and the physician continues to rely upon this medication as the years go by.

Could this have been you in the 1920's? That was when 'Empirin' Compound with Codeine first came into general use (although plain 'Empirin' Compound has been well-known since the influenza epidemic of 1918). Satisfaction through the years has prompted doctors everywhere to depend on 'Empirin' with Codeine for relief of most all degrees of pain. For with this well-tolerated, reliable analgesic combination you can be sure of results, and feel secure in the fact that the liability of addiction is negligible.

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Minnesota Blue Shield

Plans for a nationwide Blue Shield "senior citizens" program were announced last month by the American Medical Association and the National Association of Blue Shield Plans.

The news came as leaders of organized medicine made ready to meet the all-out drive for passage of the King-Anderson bill or similar legislation in the forthcoming session of Congress.

John W. Castellucci, executive vice president of the National Association of Blue Shield Plans, said the proposed new program would provide for surgery whether performed in a hospital or a licensed nursing home.

He said the Blue Shield program will pay the full cost of medical-surgical services for a single person over 65 with an annual income of $2,500 or less and for a husband and wife whose combined annual income is $4,000 or under.

While the extent of coverage for doctor's visits in a hospital or nursing home has not yet been set, he said, the program is expected to provide no fewer than 30 visits and possibly as many as 70.

Mr. Castellucci stated that the proposed program had been under study for some time.

In a statement issued in advance of the January meeting, Dr. Henry S. Blake, Chairman of the Board of Directors of the National Association of Blue Shield Plans, said:

"Blue Shield is opposed to the King-Anderson bill and use of the social security mechanism as a method of avoiding medical care to any segment of the population."

Dr. Blake declared that the solid support of the medical profession was essential to success in establishing Blue Shield coverage as the voluntary alternative to Government-sponsored medical care for the aging.

Dr. F. J. L. Blasingame, AMA executive vice president, said the proposed program represents "another important step in the direction of achieving through voluntary, private initiative an effective solution to the problem of meeting the health care needs of the aged."

While individual Blue Shield plans in the majority of states now offer coverage for the aging, the proposed program seeks to establish uniform costs and benefits throughout the nation.

Minnesota Blue Shield became one of the first plans to offer coverage to those 65 and over with the introduction of its Senior Citizen contract in 1959. At a monthly rate of $2.95 the plan provides the same benefits as the Plan A contract, which includes allowances for diagnostic X-ray and laboratory services rendered on an out-patient basis, as well as in-hospital medical care for 120 days and surgical allowances.

The contract provides service benefits for single subscribers whose annual income is below $2400 per year or whose net worth is less than $20,000 and for married subscribers with combined earnings of less than $3600 per year and combined net worth of under $30,000.

The plan, which was originally offered during limited enrollment periods, was opened for year-around enrollment early last year. Minnesota Blue Shield hospital coverage, which was introduced in October, 1961, is also available to persons 65 years of age and over as part of the Senior Citizen medical-care contract.

The proposed national program will be reviewed this month (February) by the Minnesota Blue Shield Board of Directors.

While the Minnesota Senior Citizen plan already offers liberal coverage at low cost, it is expected that the Board will give careful consideration to the effort to establish uniform Blue Shield coverage for the aging on a nationwide scale.

In the past, the Minnesota plan has participated in National Blue Shield programs for employees in the automobile and steel industries and the Federal Government.

END

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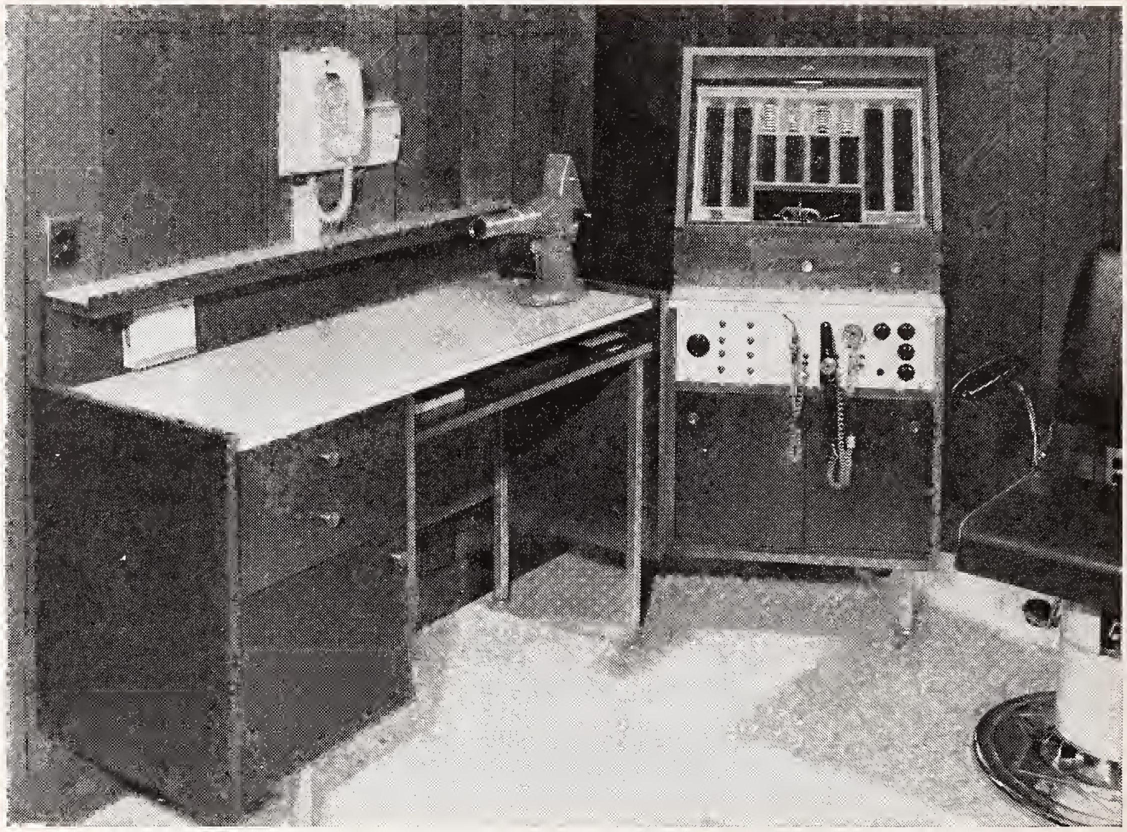

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Meetings and Announcements

FEBRUARY

American College of Physicians post graduate courses: "Pathological Physiology," Washington University School of Medicine, St. Louis, February 12-16; "Symposia on Challenging Medical Problems" Baylor University College of Medicine, Houston, February 19-23; "Gastroenterology" University of Michigan Medical School, Ann Arbor, March 5-9; "Internal Medicine," University of Chicago Clinics, Chicago, March 12-16. Contact: College of Physicians, Philadelphia.

University of California Clinical Postgraduate Program, Mexico City, February 21-March 1. Contact: Thomas H. Sternberg, M.D., University of California Medical Center, Los Angeles.

Crippled Children Services Field Clinics, February 22, Montevideo. Contact: Director, Crippled Children Services, Centennial Bldg., St. Paul.

Chicago Ophthalmological Society Conference February 16-17, Drake Hotel, Chicago. Contact: Mrs. Mary E. Ryan, 1150 N. Lorel Avenue, Chicago.

International Medical Legal Society Seminar in Honolulu, Hawaii, February 17-24. Contact: Wm. P. Hauser, M. D., IMLS, Tacoma, Washington.

MARCH

American Society of Psychosomatic Dentistry and Medicine Meeting, Shoreham Hotel, Washington, D.C., March 2-4; Contact: Dr. Philip Ament, 964 Delaware Avenue, Buffalo, N.Y.

Mayo Clinic and Mayo Foundation clinical review March 26-28, on general medicine and surgery. Contact: M. G. Brataas, Mayo Clinic. Program will be repeated April 2-4.

Minnesota Academy of Ophthalmology and Oto-Laryngology Social Meeting, Midland Hills Country Club, March 2. Contact: Marian Monahan, 4959 Excelsior Blvd., Minneapolis.

Medical College of Georgia "Pre and Postoperative Care" Course, March 20-22, at the college. Contact: Dr. Claude-Starr Wright, Medical College of Georgia.

New Orleans Graduate Medical Assembly Meeting March 12, 13, 14 and 15 at the Roosevelt Hotel, New Orleans. Contact: Office of the Assembly, 1430 Tulane Avenue, New Orleans.

American College of Surgeons Three-Day Sectional Meeting, Detroit, March 5-7, Sheraton-Cadillac Hotel. Contact: American College of Surgeons, Chicago. Also, three-day Section Meeting, Memphis, Tennessee, March 26-28, Hotel Peabody.

ANNOUNCEMENTS

Six fellowships for residents in Ophthalmology to be awarded by Guild of Prescription Opticians of America July 1. Application must be received by May 15. Write: Fellowships, Guild of Prescription Opticians of America, 110 E. 23rd St., New York City.

Southern Medical Association, Section of Ophthalmology and Otolaryngology will accept papers to be considered for presentation at the Miami Beach annual meeting, Nov. 12-15, until May 15. Contact: Dr. Albert Esposito, First Huntington National Bank Bldg., Huntington, West Virginia.

Fifteen fellowships of $400 and a number of scholarships to help further the skills of professional persons working with the crippled are available from the National Society for Crippled Children and Adults. Deadlines for filing applications are March 15 for fellowships, and April 1 for scholarships. Contact: NSCCA, 2023 W. Ogden Ave., Chicago.

Committee on scientific exhibits for the June meeting of Minnesota State Medical Society is desirous of receiving applications from persons or organizations interested in making an exhibit. Contact: Lyle J. Hay, M.D., 714 9th Avenue South, Minneapolis.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota: Anesthesia for Specialists March 5-7; Treatment of Traumatic Injuries March 16-17; Otolaryngology for Physicians, April 12-14; Internal Medicine April 16-18; Surgery April 26-28; Gynecology April 30-May 2; May 7-9 Ophthalmology; Proctology for General Physicians May 14-18; Psychiatry May 31-June 2.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: March 5-23; April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

Next scheduled examination (Part II), oral and clinical, for all candidates will be conducted at the Edgewater Beach Hotel, Chicago April 9-14. Contact: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland.

American Therapeutic Society Prize Essay of $500 to be awarded. Manuscript and approving letter from chief of service must be in hands of Secretary, Oscar B. Hunter, Jr., 915 19th Street N. W., Washington, D. C, by March 1.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota: Anesthesia for Specialists March 5-7; Treatment of Traumatic Injuries March 16-17; Otolaryngology for General Physicians, April 12-14; Internal Medicine April 16-18; Surgery April 26-28, Gynecology April 30-May 2; Ophthalmology May 7-9; Proctology for General physicians May 14-18; Psychiatry May 31-June 2.

* *

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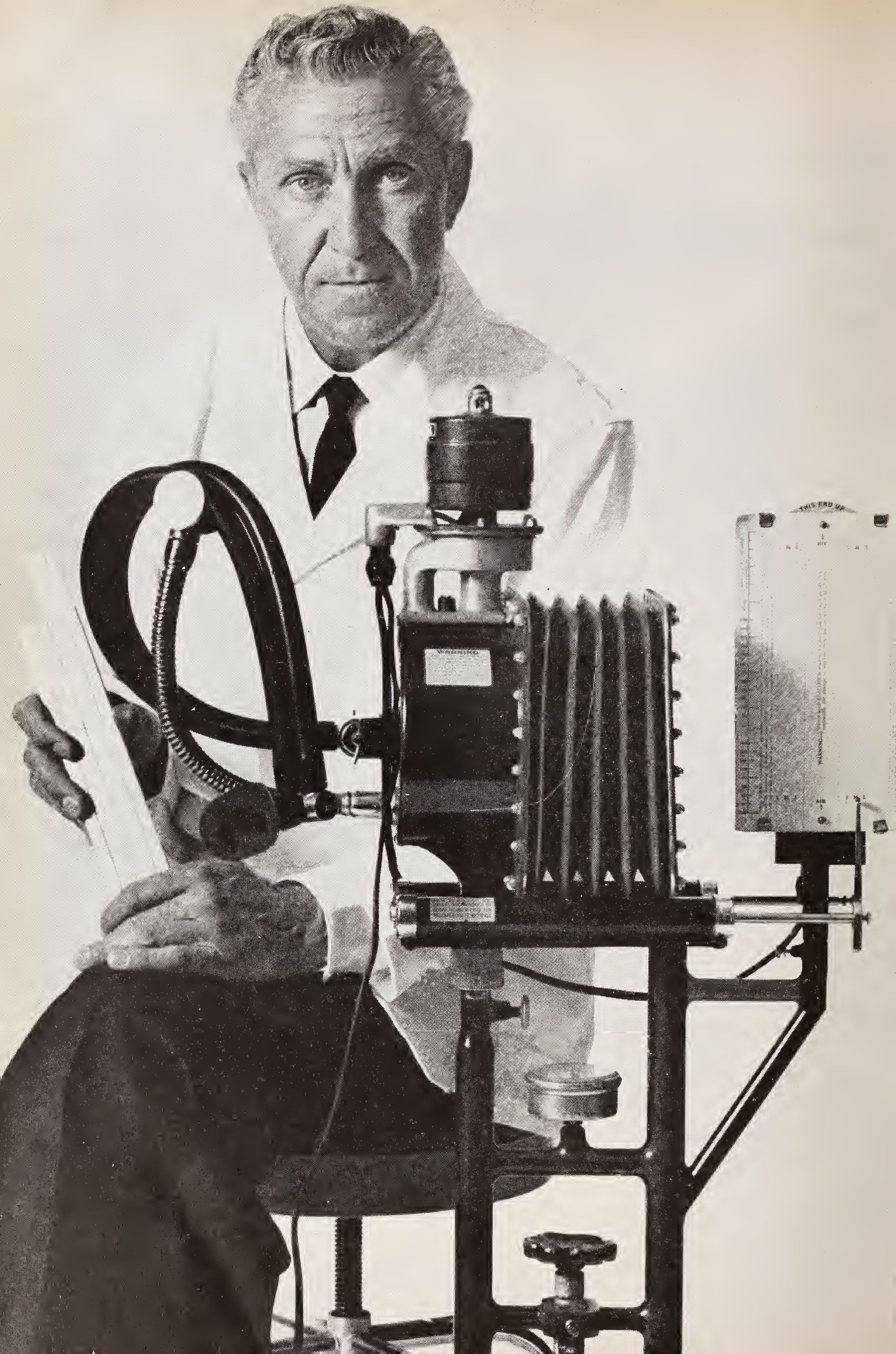
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Can we measure the patient's comfort?

The physician can measure the basal metabolic rate by means of oxygen consumption. But he has no instrument—no objective test—for measuring comfort.

For this, he must depend upon his own powers of observation and the patient's own description of how he feels.

Because these are, admittedly, subjective criteria, the validity of results hinges entirely on the experience and objectivity of the investigators involved.

Such well-qualified clinicians have reported that a new corticosteroid developed in the research laboratories of Upjohn actually raises the level of relief obtainable with this type of therapy.

This difference cannot be "proved." It must be seen. And the only practical way for you to do this is to evaluate this new drug critically in your own practice. Please do, at your first opportunity. We are confident that you will be glad you did.

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Alphadrol*

Each tablet contains Alphadrol (fluprednisolone) 0.75 mg. or 1.5 mg.
Supplied in bottles of 25 and 100.

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More than twice as potent as prednisolone, Alphadrol exhibits no new or bizarre side effects. Salt retention, edema or hypertension, potassium loss, anorexia, muscle weakness or muscle wasting, excessive appetite, abdominal cramping, or increased abdominal girth have not been a problem.

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In Memoriam

JAMES V. WILSON

Doctor James V. Wilson, 59, prominent St. Paul physician died December 21, while attending a student in the St. Thomas college infirmary. In addition to his private practice, he was physician for the college and military academy for thirty years.

Born in Ireland, Dr. Wilson received his college and medical degrees from Marquette University. He was a member of the American Medical Association, the Minnesota State Medical Associaton, the Ramsey County Medical Society, and St. Paul Society of Internal Medicine. Dr. Wilson was formerly chief of staff of St. Joseph's Hospital.

He is survived by his wife, two daughters, and two sons.

RAYMOND J. JOSEWSKI

Dr. Raymond J. Josewski, 64, practicing physician in Stillwater, died November 3 in his sleep. He was born in North Dakota and received his medical degree from the University of Illinois.

He was a veteran of World War I, a member of the American Legion, the Elks, the Knights Templars, Royal Arch Masons and Osmun Temple of the Shrine. Dr. Josewski was a member of the American Medical Association, the Minnesota State Medical Association, and the Washington County Medical Society.

ROLLAND E. KEEFE

Dr. Rolland E. Keefe, 54, practicing St. Paul physician and physician at Anoka State Hospital, died December 1, en route to a hospital.

He was born in St. Paul, and received his medical degree from the University of Minnesota.

Dr. Keefe was a member of the American Medical Association, the Minnesota State Medical Association, the Ramsey County Medical Society, and the St. Paul Athletic Club.

He is survived by his wife and a son.

THOMAS ZISKIN

Dr. Thomas Ziskin, 72, Minneapolis heart specialist, died November 18, at his home. He was associate professor of medicine at the University of Minnesota from 1920 to 1946 and chief cardiologist at Minnesota Veterans Hospital during this same period.

He was born in Grand Forks, North Dakota, and graduated from the University of Minnesota medical school. Dr. Ziskin was a life member of the Minnesota State Medical Association and Hennepin County Medical Society and a member of the American Medical Association, Minnesota Heart Association, Central Society for Clinical Research and active on the staff of Mount Sinai Hospital. For twenty years he was recording secretary for the Jewish Family Service and member of Temple Israel.

He is survived by his wife and son.

JANE F. KENNEDY

Dr. Jane F. Kennedy, 92, died January 2 after several months of illness. She received her degree from the University of Minnesota medical school and practiced medicine in Minneapolis for approximately fifty years. Dr. Kennedy served on the University Health Service staff.

Dr. Kennedy was a member of the American Medical Association and Hennepin County Medical Society and a life member of the Minnesota State Medical Association.

She is survived by her son, Dr. George L. Kennedy of Faribault.

JNO. C. JACOBS

Dr. Jno. C. Jacobs, 83, former Kandiyohi county coroner and past vice president of the Minnesota State Medical Association died January 3, in Willmar. He was born in Kandiyohi County and graduated from the University of Minnesota medical school. Dr. Jacobs started his practice in 1907 at Spicer, Minnesota, and from 1923 to 1951 he served as county coroner. He was president and secretary of the Crow River Medical Society, a forerunner of the present Tri-County Medical Society, comprising Kandiyohi, Swift and Meeker counties.

He was a member of the American Medical Association and Kandiyohi-Swift-Meeker Counties Medical Society and a life member of the Minnesota State Medical Association. He was closely associated with a number of hospitals in this area and was a member of the Masonic Lodge, Odd Fellows, Sons of Norway, Chamber of Commerce and the Minnesota Historical Society.

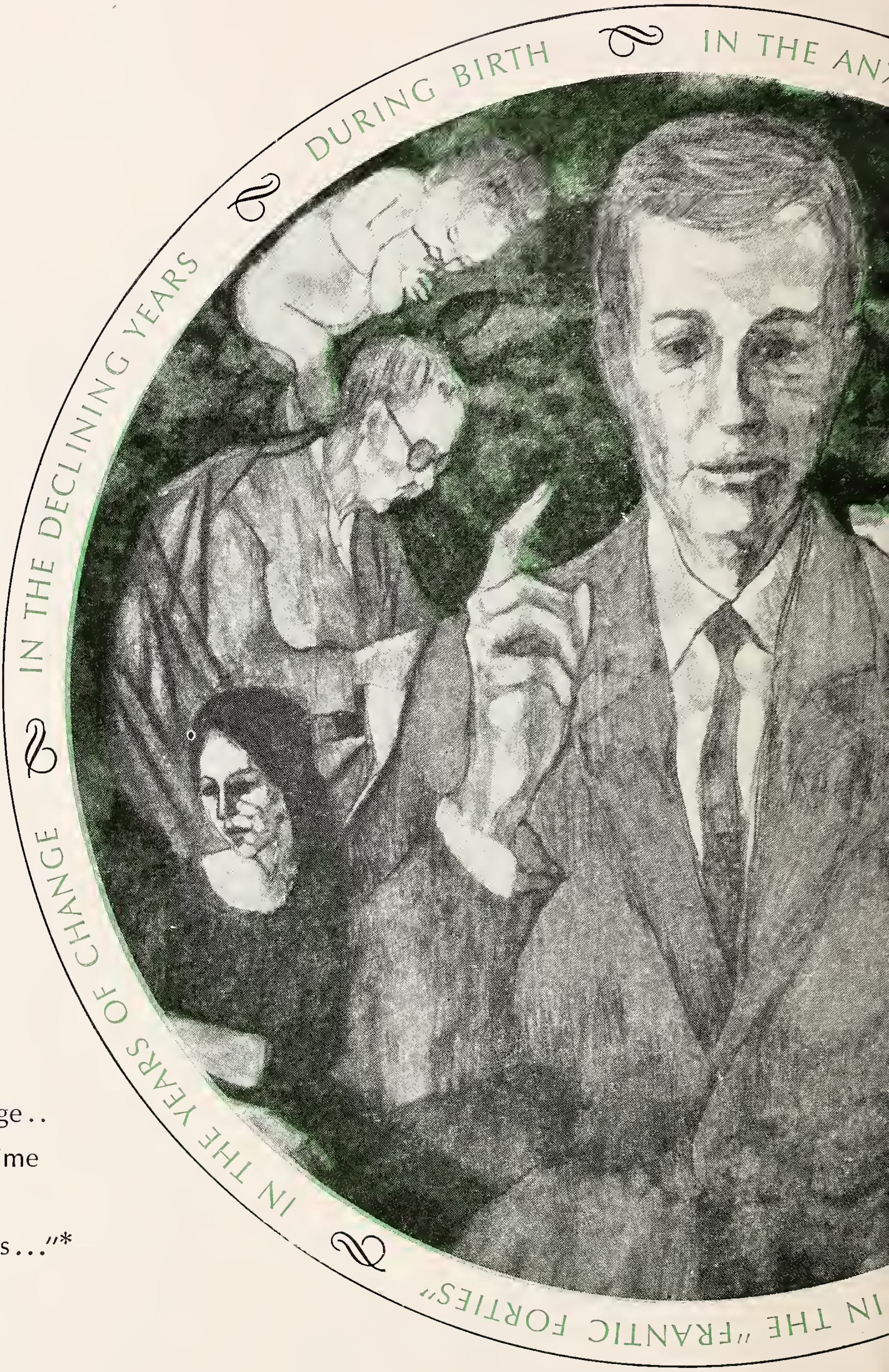
Dr. Jacobs is survived by his wife, daughter, and three sons, one of whom is Dr. Douglas Jacobs of Willmar.

RAYMOND DANE NICHOLS

Dr. Raymond Dane Nichols, Cuyuna range physician, 41, died November 16, at St. Joseph's Hospital in Brainerd.

He was born at Van Wert, Ohio, and received his degree from the Ohio State University Medical School. Dr. Nichols was president of the local Quarterbacks Club and chairman of the Deerwood School Board. He was a member of the American Medical Association, the Minnesota State Medical Association, and the Upper Mississippi Medical Society.

Dr. Nichols is survived by his wife and two sons.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IN THE AN
IN THE DECLINING YEARS
IN THE YEARS OF CHANGE
IN THE "FRANTIC FORTIES"

"All the world's a stage..
And one man in his time
plays many parts,
His acts being seven ages..."*

**As You Like It*, Act II, Sc. 7

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in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York ty, June 26-30, 1961.

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INDICATIONS: VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

ADMINISTRATION AND DOSAGE: Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

PRECAUTIONS: Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

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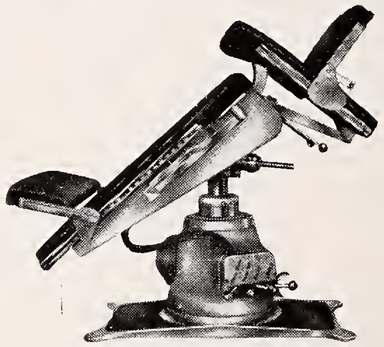

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Physician's Diary

DEDICATION DAY at Eitel hospital, Jan. 4, found the traditional ribbon-cutting—this ribbon was a wide strip of surgical gauze—turned into a seven-man race. Winner was George Dayton, left, who headed the United Hospital fund-raising campaign several years ago that raised 17 million dollars. Other ribbon-cutters, from the left were Dr. Walter H. Judd, Minnesota congressman from the fifth district, main speaker at the dedication; Robert C. Brame, Eitel hospital's first-born of record; Governor Elmer Andersen (who finished second); Dr. George Eitel, nephew and namesake of the hospital's founder; Frank Moulton, president of the Minneapolis city council; and Dr. Alton C. Olson, president of the Eitel hospital board of trustees. Hospital instruments were used by the seven, including surgical knife, cast cutters and surgical scissors.

Dr. and **Mrs. R. W. Gustafson** of Spring Valley and Dr. Jo E. Anderson of Le Sueur recently attended the clinical meeting of the American Medical Association in Denver.

* * *

Dr. Bruce A. Kottke, Dr. Douglas B. McGill, and **Dr. Byron L. Riggs** have been appointed to the staff of the Mayo Clinic as consultants in internal medicine.

* * *

Dr. F. A. Buck was honored at a dinner recently for his fifty years of medical practice in Shakopee.

* * *

Dr. Harry N. Simmonds of Prior Lake was installed as president of the Scott-Carver Medical Society at a meeting in December. Other officers installed were **Dr. Elmer Dougherty** of New Prague as vice president and **Dr. Charles Bean** of Waconia as secretary-treasurer.

* * *

Dr. Donnell Etzwiler and **Dr. Albert J. Schroeder** were guest speakers at the Minnesota Nurses Association Fall Pediatric Workshop held at the Leamington Hotel, Minneapolis in December.

The Minnesota Chapter of the American Academy of Pediatrics elected new officers at its recent meeting: **Dr. Albert J. Schroeder,** Minneapolis, Chairman; **Dr. Robert Bergan,** Duluth, Vice Chairman; **Dr. Walter Wilder,** Minneapolis, Secretary-Treasurer.

* * *

Dr. W. Spencer Payne has been appointed to the staff of the Mayo Clinic, Rochester, Minnesota, as a consultant in general surgery.

* * *

T. L. Larson, Assistant Secretary of the Druggists Mutual Insurance Company, Algona, Iowa, retired from the company after 41½ years of service.

* * *

Dr. H. J. Smith of Lake Crystal was elected president of the Immanuel Hospital Medical Staff at its annual meeting. Other new officers elected were: **Drs. H. O. Morgan** of Amboy, Vice President; **C. J. Strobel** of Mankato, Secretary. These officers and two elected members: **Drs. C. E. Thiem** and **A. M. Scheidel** of Mankato comprise the Executive Committee.

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Dr. Robert R. Kierland, member of the section of dermatology at the Mayo Clinic, has been named to his fifth consecutive term as secretary-treasurer of the American Academy of Dermatology and Syphilology.

* * *

Dr. Nels O. Sandven, Paynesville, retired in December and plans to spend some time in Hudson, Wisconsin, with his son and family.

* * *

Dr. Hugh R. Butt, head of a section of medicine at the Mayo Clinic has been named president of the American Association for the Study of Liver Diseases.

* * *

Dr. Ralph R. Rayner has become associated with the Interstate Clinic at Red Wing as a specialist in the field of general surgery.

* * *

Dr. Clifford Lake, Rochester, has been elected a new member in the American Rhinologic Society.

* * *

The St. Cloud Medical Group announces the association of **Drs. Donald C. Heckman** in Pediatrics and **Thomas H. Luby** in Internal Medicine.

* * *

Dr. William H. ReMine, head of a section of general surgery in the Mayo Clinic, has been elected a member of the Society of Medical Consultants of the Armed Forces.

* * *

Dr. Leonard Lang, Minneapolis obstetrician and gynecologist, spoke recently at the Red River Valley Medical Society meeting.

* * *

Dr. L. H. Bendix of Annandale was recently honored for his service to his community.

* * *

New officers of the Zumbro Valley Medical Society are: **Dr. Alvin B. Hayles,** president; **Dr. C. H. Hodgson,** vice president; **Dr. E. W. Johnson, Jr.,** secretary-treasurer; and **Dr. R. E. Fricke,** executive secretary. All are from Rochester.

* * *

Dr. John W. Gridley, Arlington physician, recently returned from a month's work among citizens in the northwest corner of the Central American country of Honduras.

* * *

Dr. Robert A. Good, professor of pediatrics, **Dr. Arthur C. Kerkhof,** clinical associate professor of medicine, **Dr. Donald R. Lannin,** clinical assistant professor of orthopaedics and **Dr. Richard L. Varco,** professor of surgery at the University of Minnesota conducted the seminar sponsored by the Southwestern Chapter of the Minnesota Academy of General Practice in Slayton.

* * *

Dr Edgar A. Hines, Jr., a member of the staff of the Mayo Clinic recently retired from the active practice of internal medicine. He will move with Mrs. Hines to Brevard, North Carolina.

* * *

New officers of the Ramsey County Medical Society are: **Dr. Benjamin A. Weis,** president; **Dr. F. M. Owens, Jr.,** president-elect; **Dr. Eugene Scott,** vice president, and **Dr. William H. Hollinshead,** secretary-treasurer.

* * *

Establishment of a new Minnesota Medical Foundation permanent medical research program at the University of Minnesota medical school was announced this month by Dr. Arnold Lazarow, foundation president. Starting February 1, the foundation will offer grants for research conducted by faculty and students of the medical school in the basic areas of heart disease and cancer research.

* * *

Dr. James W. Kernohan, internationally recognized authority on neuropathology and a member of the staff of the Mayo Clinic will retire from that institution and become associated as a consultant at the Barrow Neurological Institute in Phoenix, Arizona.

* * *

Dr. William S. Chalgren of Mankato, recently attended the annual meeting of the American Epilepsy Society and the annual meeting of the Association for Research in Nervous and Mental Diseases in New York.

* * *

Dr. Carl F. Peikert has joined the staff of the Doctors Clinic, Forest Lake.

* * *

Dr. Haddow M. Keith, senior consultant in pediatrics at Mayo Clinic, was elected an affiliate member of the Royal Society of Medicine of England in October.

* * *

Dr. Raymond Sanford of Mankato was named president of the Blue Earth County Medical Society at its annual meeting. Other officers elected were: **Dr. John Lester,** vice president, **Dr. Hobert Setzer,** secretary-treasurer; **Dr. J. Donald Sjoding** and **Dr. A. M. Schiedel,** delegates to state meetings.

* * *

Stockholders of St. Charles Community Medical Center recently voted to sell the center to Drs. S. K. McHutchinson and Dale Hawk.

* * *

Dr. Leo O. Furr was elected president of the Renville-Redwood County Medical Society at its annual meeting. Other officers elected were: **Dr. G. C. Bingham,** vice president; **Dr. James Rud,** Buffalo Lake, secretary-treasurer; and **Dr. Chester Anderson** of Hector, delegate.

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Dr. Paul F. Meyer was elected chief of staff and president of the medical staff of Rice County District One Hospital. **Dr. D. W. Francis** of Morristown was elected assistant chief of staff and **Dr. Paul G. Bauer,** secretary.

* * *

Dr. Clark H. Millikan of the Mayo Clinic was appointed to the National Advisory Committee on Neurological Diseases and Blindness.

* * *

Dr. John Rutledge of Detroit Lakes was elected president of the Clay-Becker County Medical Society at its annual meeting. **Dr. M. E. Odland** of Detroit Lakes was elected secretary. **Dr. Richard Tregilgas** of St. Paul spoke on "The Disability Problem."

* * *

Dr. R. P. Hallin, Worthington, has accepted a residency in Physical Medicine and Rehabilitation at the University of Minnesota.

* * *

Dr. D. R. Nelimark of the Lenont-Peterson Clinic in Virginia attended a medical seminar for FAA medical examiners held at the Mayo Clinic.

* * *

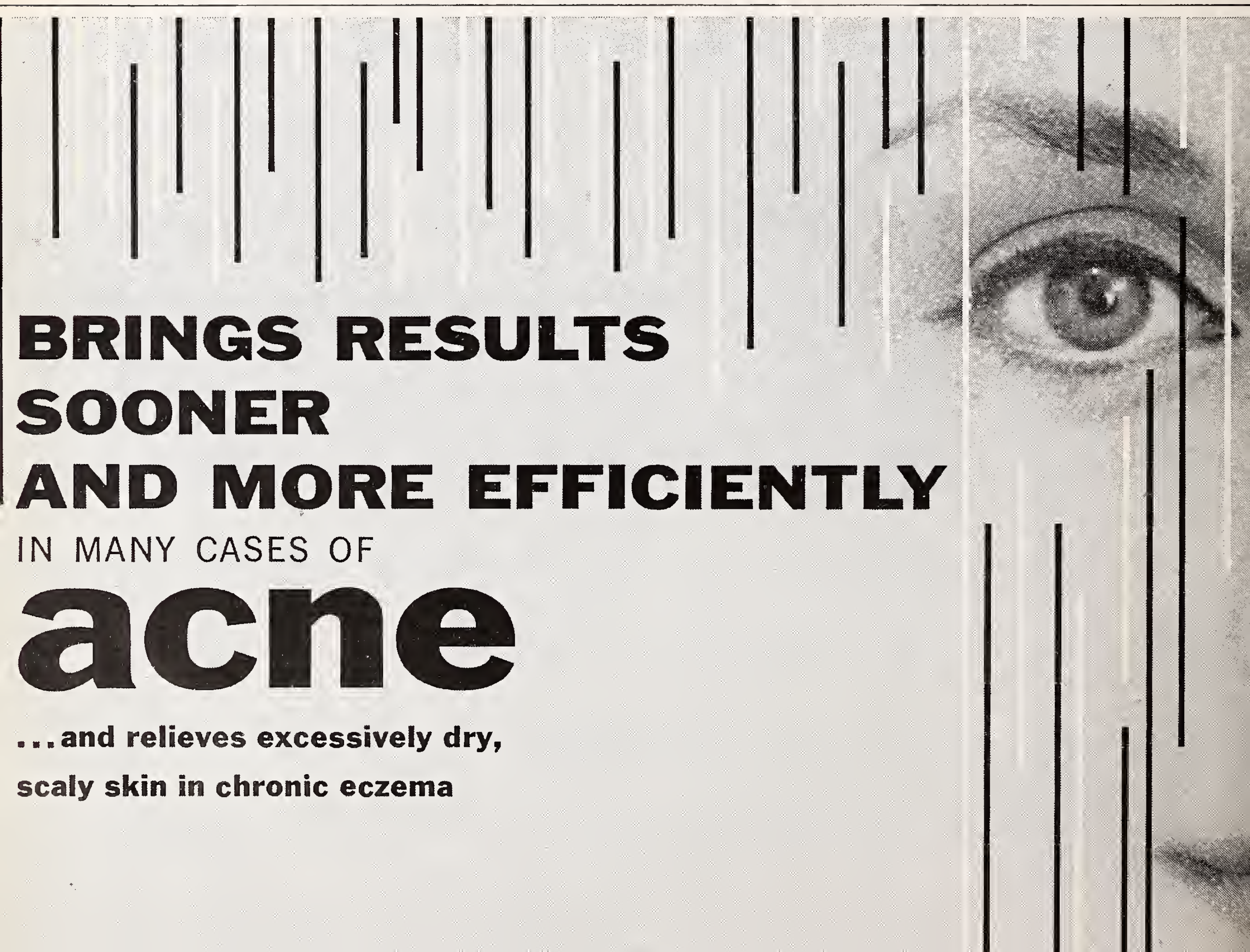
Dr. Herbert W. Schmidt, head of a section of medicine in the Mayo Clinic, was elected vice chairman of the Board of Regents of Saint Olaf College, Northfield.

* * *

The Southwestern Minnesota Medical Society Auxiliary held its annual meeting at the home of **Dr.** and **Mrs. W. G. Benjamin** in Pipestone.

* * *

Three changes have taken place in the Mayo Clinic Section of Clinical Pathology: **Dr. D. R. Mathieson** is now senior consultant. **Dr. Charles A. Owen** is now active head of the clinical pathology section, and **Dr.**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acne
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George Stilwell has been transferred to become a member of the clinical pathology section.

* * *

Dr. P. J. Hiniker has retired after more than 30 years of medical practice in LeSueur.

* * *

Dr. Ormond S. Culp of the clinic section of Urology at the Mayo Clinic served as toastmaster of the 16th annual convention of the Association of Medical Illustrators held in November.

* * *

Dr. J. P. Grahek of the Ely Clinic attended the Fall Refresher sponsored by the Minnesota Academy of General Practice.

* * *

Dr. W. A. Piper has retired after 47 years of active medical practice in Mountain Lake.

* * *

Dr. Bayard T. Horton, Mayo Clinic, was elected president of the American Association for the Study of Headaches at its annual meeting in New York City.

* * *

Dr. W. E. Macklin, Jr., who has headed the radiology department at Rice Hospital in Willmar, recently was given special recognition in tribute to his service to the area and his retirement from active practice. Dr. Macklin has moved to his new home at Mound.

* * *

Dr. E. H. Rynearson of the Mayo Clinic spoke before a group of educators in Austin recently.

* * *

Dr. Richard Payne of Virginia has left for eight months of voluntary medical service at a mission station in the turbulent Cameroons, east of Ghana on the west coast of Central Africa.

Drs. R. Drew Miller, Talbert Cooper, and **Norbert O. Hanson** took part on the program at the fall conference of the Midwest Regional Group of the Medical Library Association in Rochester. **Drs. George G. Stilwell, Edward H. Rynearson,** and **Howard P. Rome** served on a panel on medical book selection with other medical librarians.

* * *

Dr. and **Mrs. Talbert Cooper** and their daughter of Rochester, recent victims of a traffic accident, are all reported in satisfactory condition.

* * *

Dr. Charles W. Mayo was elected chairman of the University of Minnesota board of regents.

* * *

Dr. Herman E. Drill of Hopkins has been elected to a four year term on the board of trustees of the Minnesota Medical Foundation.

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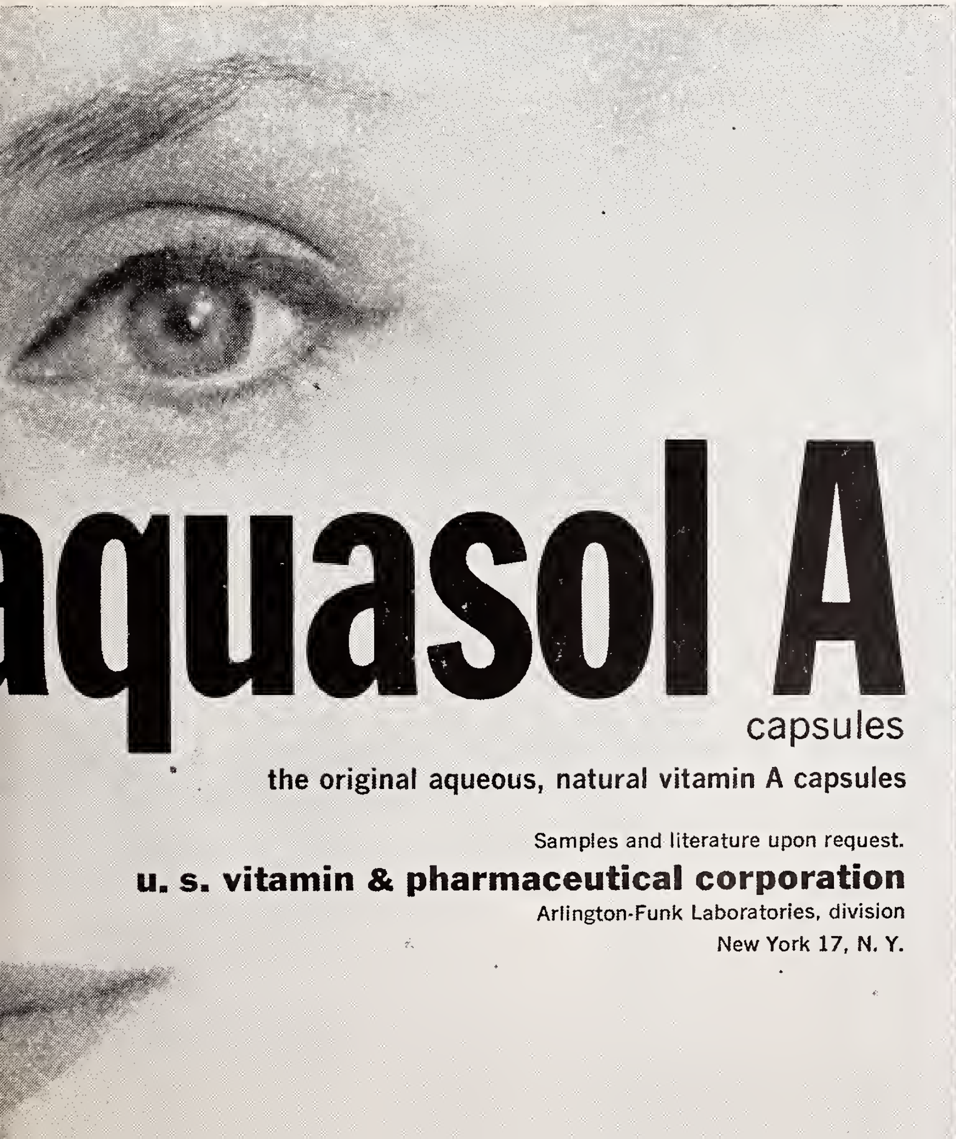

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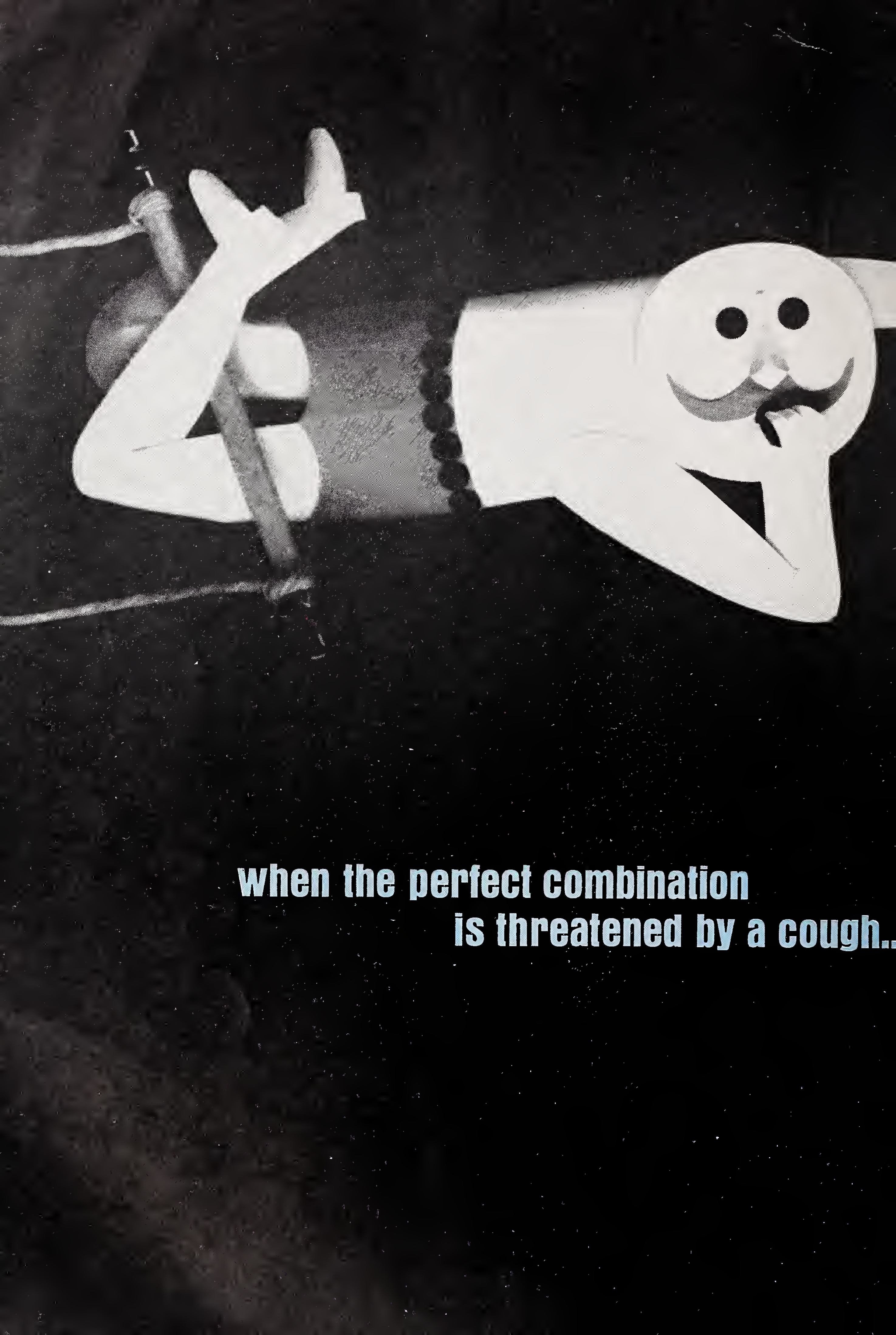
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Bibliographical references should be limited to twelve and should be typed in conformity to the method used by the Quarterly Cumulative Index. They should be numbered consecutively in the order in which they first appear in the text. Book references should give the name of the author, title, edition number, publisher, and the year.

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President's Letter

Greetings:

There has evolved a changing relationship between the physician and media of communication. Whereas a generation ago the physician considered himself bound to complete silence when queried about newsworthy medical items, such an attitude no longer obtains. Heretofore the physician may have refused summarily to cooperate in the preparation of such material because of two apprehensions: (1) he was justly concerned about protecting the patient from the disclosure of confidential information, and (2) he was deterred by fear of censure on the part of his colleagues.

A strong sense of responsibility in the matter of unauthorized disclosure of privileged information remains valid: the confidential nature of the physician-patient relationship must remain inviolable. However, in matters not regarded as privileged communications there has been a significant change in the philosophy concerning a physician's participation in the dissemination of news about medicine and advances in both the basic and the medical sciences.

The interest of the public in information about general health is keen, and the people insist upon facts. An inherent curiosity in everyone about our physical and mental functioning is continually augmented by admonitions from every side to watch for this or that symptom. From every quarter, during moments one spends at the radio or television set or in light reading, come repeated interruptions in dulcet tones or printed persuasion urging that we "fight" this or that disease with dollars. Health matters which once were talked about only in cloistered areas are now topics for open discussion, and this is good. An informed person is better able to recognize and therefore expose the cultist's claim and the nostrum. The public is being and will continue to be provided with medical information which is accurate or inaccurate, depending upon the cooperation of the physician in preparing the material. That which is accurate is a credit both to news media and to the medical profession: reporting is of negative value if it is inaccurate, incomplete or incomprehensible.

Lest any physician be uncertain of areas of propriety and of his responsibility as he discusses medical matters with representatives of the news media, a "code of cooperation" has been established in Minnesota for his guidance. A copy may be obtained from our state office. This code, drawn up after much deliberation among representatives of hospitals, physicians and media of communication, has been approved as a guide by numerous cooperating organizations. In addition to the Minnesota State Medical Association, these include the Minnesota Associated Press, the Minnesota Newspaper Association, the Minnesota Hospital Association and the Northwest Radio-Television News Association.

As stated in the preface of the document, "Codes of cooperation between doctors and hospitals and the news media have one common goal; to furnish medical news to the public which is accurate, authentic and objective, and to provide free access to such medical news for such reporting."

The suggestions contained in this code indicate, among other things, topics which a physician may properly discuss with members of the news media concerned. It suggests the need for and describes how certain authorized spokesmen for medical societies should carry out their duties. It presents a detailed guide to legitimate and ethical action in a variety of situations involving cases which either are or are not matters of public record.

The public's concept of a physician has been assaulted on occasion by those having diverse purposes. Medicine must be alert constantly to maintain good public relations. In addition to doing a good job in the practice of medicine, good public relations imply dissemination of information about that achievement. In this sense, a physician's cooperation with representatives of the various news media, whenever his help is solicited, is not only ethical but indeed is to be encouraged.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
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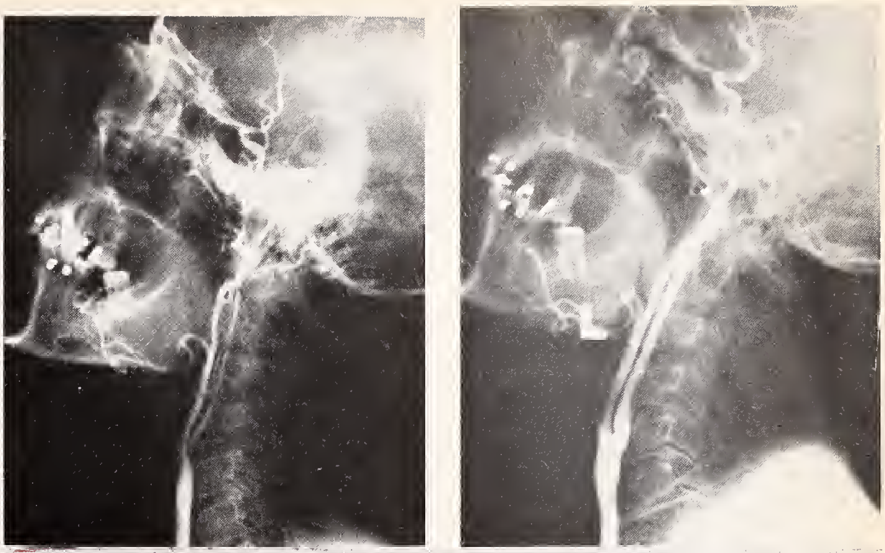

Fig. 1

(A) Left carotid angiogram before endarterectomy. Note pronounced narrowing of the internal carotid artery and meager intracranial vessel filling.

(B) Left carotid angiogram 2 months following endarterectomy. Patient had complete relief of symptoms. Note increased calibre of internal carotid artery and excellent intracranial vessel visualization.

CAROTID ENDARTERECTOMY

Patients are being salvaged from permanent brain damage by a vigorous attack upon occlusive disease in the carotid arteries. If all physicians are alerted to adequately examine and consider carotid artery occlusive disease whenever cerebral symptoms or signs appear, many patients will be saved from the ravages of the so-called "stroke." A timely article for all clinical physicians!

Within recent years many so-called "strokes," "cerebrovascular accidents," apoplectic attacks, etc., which formerly were assumed to be of intracranial vascular etiology have come to be recognized as originating in the extracranial carotid system.

As early as 1905, Chiari[1] drew attention to the frequency of atherosclerotic changes in the region of the bifurcation of the carotid artery in the neck. Although he recognized that these changes were often associated with cerebral symptoms and lesions, he related the symptoms to an associated embolic phenomenon. Hunt[2] in 1914, while studying a number of hemiplegias of vascular origin, noted that not infrequently the carotid arterial pulsation was extremely diminished or absent on the side of the cerebral lesion. He recognized the importance of the collateral circulation in the prevention of the development of cerebral

---

From the Department of Surgery, Division of Neurosurgery, University of Minnesota Medical School, Minneapolis, Minnesota.

* Medical Fellow, Division of Neurosurgery.

** Professor and Director, Division of Neurosurgery.

*** Instructor, Division of Neurosurgery.

lesions and suggested the term "cerebral intermittent claudication" for the premonitory, transient episodes of cerebral dysfunction that are frequently associated with this entity.

The observations of these two early investigators were for the most part neglected until 1937, when Moniz et al.[3] reported on the use of cerebral angiography in the diagnosis of carotid occlusion. This method assured the detection of carotid artery disease during life. The procedure was rapidly approved in Europe but was slow to gain wide acceptance in this country. Consequently, earlier reports of carotid artery occlusion dealt primarily with material secured at autopsy. For instance, the pathologic studies of Fisher,[4,5] (1951-1954) again drew attention to the frequency of extracranial carotid artery occlusion. In 432 consecutive routine autopsies he observed complete occlusion of one or both carotid arteries in 6.5 percent, and severe luminal narrowing in an additional 3 percent; thus, a total of 9.5 percent showed evidence of severe carotid artery disease.

Johnson and Walker[6] (1951) discovered six cases of spontaneous thrombosis of the common or internal carotid arteries during the course of angiography for suspected brain tumors, vascular malformations, or aneurysms; they reviewed another 101 reported cases of angiographically proved thrombosis of the carotid artery. In 40 percent of these cases transient episodes of neurologic dysfunction were elicited, sudden catastrophic onset with immediate severe neurologic deficit was noted in 35 percent; 25 percent revealed a slowly progressive course of neurologic embarrassment simulating that occurring in an expanding intracranial lesion.

Following successful repair of obstructing lesions in the arterial system of the lower extremities attention was drawn to the possibility of surgical attack on obstruction of the extracranial cerebral vessels. In 1954, Eastcott, Pickering, and Rob[7] reported the first successful repair of a partially obstructing lesion of the carotid artery. Innumerable reports of surgical repair of such lesions have since appeared.[9-22]

In 1955, Millikan and Siekert[8] defined the characteristics of a partially obstructing lesion, and coined the term "intermittent insufficiency of the carotid arterial system."

This paper will summarize our surgical experience with obstructing lesions of the extracranial portion of the carotid artery. A discussion of the clinical features of this entity will also be given.

Clinical Manifestations

The clinical syndrome follows one of three rather distinct patterns:

1. In most cases symptoms are at first transient and episodic, but over a period of time they become constant. Generalized headache, which occasionally becomes confined to one side, is often the first symptom. This sign may be followed by transient contralateral hemiparesis with greatest involvement of the upper extremity, episodic ipsilateral blindness or visual disturbance (homonymous hemianopsia), sensory disturbances varying from dysesthesias to hypalgesia, dysphasia to aphasia (when the dominant hemisphere is involved), occasionally epilepsy, failing memory, and vertigo. Such symptoms usually appear suddenly, last a few minutes to an hour or two, and may clear suddenly or gradually. Generally, these episodes tend to recur with increasing frequency and severity and commonly terminate with sudden hemiplegia and aphasia.

2. Less frequently, the onset of symptoms may be slowly progressive, simulating an expanding intracranial lesion. Frequently associated with this type of onset is severe headache of some months duration, followed by paresthesias and weakness of the contralateral hand and arm, with gradual spread to the leg. Mental regression, occasional convulsions, and speech impairment slowly appear. The total period of development of this picture may be a year or two.

3. Occasionally the onset may be sudden and catastrophic with loss of consciousness and hemiplegia. Aphasia may be present if the dominant hemisphere is involved. Spontaneous improvement following this type of onset is very slight.

Physical signs of carotid arterial insufficiency are few. A unilaterally diminished carotid pulsation is often observable through palpation over the artery. Groch et al.[23] have expressed the belief that palpation of the carotid artery in the tonsillar fossa is a more reliable technique in establishing whether or not the pulsations are unilaterally decreased. A soft, systolic bruit may be heard over the carotid artery, but this may have doubtful significance. Occasionally a bruit is heard, not over the involved artery, but over the contralateral vessel. Such an occurrence may be explained on the basis of increased blood flow through the opposite artery. Horner's syndrome, usually in an incomplete form consisting of only mild ptosis and miosis, has been noted by some authors.[20,23,25] Ophthalmodynamometry has been used effectively in the diagnosis of carotid artery insufficiency,[23,24,26] but not all authors agree about the reliability of this means of evaluating insufficiency.[27] It is well recognized that equality of the bilateral retinal artery pressures does not rule out the possibility of carotid artery disease. When compression of the contralateral artery is employed, subsequent syncope is considered to be a positive result.[28] Electroencephalographic changes—especially those observed by use of a tilt-table—have been reported helpful.[29] Other changes, such as visual field defects, unilateral retinopathy, and asymmetric hypertensive retinopathy, have been cited in a few instances.[24]

The preceding symptoms and signs are extremely helpful in suggesting the probable diagnosis, but angiographic evidence is necessary for full confirmation.[12,13,21] Without adequate radiographic demonstration it is impossible, short of surgical visualization, to determine the exact location and extent of the lesion, and most important, the status of the vessel(s) distal to the site of the lesion.

Pathologic Characteristics

The underlying pathologic process in most cases has been atherosclerosis. Other diseases, such as thromboangitis obliterans and Buerger's disease, have been implicated, but these are exceedingly rare, and furthermore, the validity of the reported cases has been questioned. Caldwell and Hadden[30] reported eight cases of carotid arterial thrombosis with disastrous cerebral effects following trauma to the neck or region of the tonsillar fossa. Anomalies of the cervical vertebrae may occasionally compress the internal carotid or vertebral artery. Boldrey et al.[31] reported a case characterized by repeated attacks of transient hemiplegia that occurred with turning of the head; surgical exploration revealed that the internal carotid artery was bound down and compressed by the transverse process of the atlas.

Atheromatous occlusive disease generally assumes two distinct patterns of involvement. DeBakey[13] has classified these as a proximal and distal form and has emphasized their segmental nature. In the proximal type, the occlusive process involves one or more of the branches of the aortic arch. In this area, the obstruction may be complete or incomplete; and may be confined to a short segment of the artery near its origin or may be more extensive and involve the major portion of the course in the neck. Because of the large number of distal collateral arteries arising in the chest and neck, the distal portion of the artery remains patent despite complete proximal occlusion.

In the distal form, the occluding atheromatous process usually occurs at the origin of the internal carotid or vertebral arteries. In the earlier stages the obstruction is only partial and remains well localized. At this stage the vessel proximally and distally remains relatively uninvolved. With complete occlusion, however, extension of the process into the intracranial portion of the vessels occurs. For this reason, all but the acute forms of distal obstruction have generally been found to be inoperable. Another peculiar feature of the distal form of obstruction is the tendency for the atheroma to be limited to the internal carotid artery. It may extend into the common carotid artery, but rarely involves the external carotid artery to any significant degree. This fortuitous occurrence often provides a valuable channel of collateral circulation to the intracranial vessels via anastomosis through the various branches of the external carotid artery and the vertebral artery.[32,33]

The initial lesion is usually a small flat, subintimal plaque which slowly enlarges to occlude the lumen. Ulceration of, or sudden hemorrhage into, the plaque may hasten the disease process and may be associated with sudden, disastrous occlusion of the vessel. Fisher's[4,5] studies have shown that incomplete atherosclerotic lesions of the internal carotid artery in the neck rarely involve associated arteriosclerosis of the intracranial vessels. DeBakey, Crawford and Fields[14] have shown that multiple lesions occur in 43 percent of cases and may therefore limit the chance of very permanent recovery.

Occlusive disease of the internal carotid artery may occur at any age[34] but has been reported to occur most often between ages 45-70 years.[35] Occlusive disease involving the great vessels from the aortic arch tends to involve a younger age group. Men are more prone to occlusive disease of the internal carotid and basilar arteries, whereas occlusions of the aortic arch are more common in women.

Presentation of Data

The data for this study are derived from all patients with occlusions of the carotid artery subjected to surgical exploration between 1955 and 1960 at the University Hospitals and at Veterans Hospital, Minneapolis.

In the majority of cases the clinical history proved extremely valuable in establishing a tentative diagnosis of an insufficiency syndrome. Because of the proximity of the internal and external carotid arteries in the region of the tonsillar fossa, palpation in this area was not found to be a reliable means of determining diminished blood flow in the internal carotid artery. Horner's syndrome has not been observed in this series. Ophthalmodynamometry has not been employed widely in this study.* The Matas test (compression of the involved artery to test the adequacy of collateral circulation) has been employed. Because of the potential dangers involved, we have not used compression of the contralateral artery as a means of determining insufficiency.

Several techniques of arteriography were utilized: direct percutaneous puncture of the carotid artery (used in most of these cases); direct percutaneous puncture of the subclavian artery; reflux brachial angiography, and aortocerebral angiography (placement of a catheter in the aortic arch from either the brachial or femoral arteries).

Type of Attacks

Table 1 illustrates the frequency in our series of the three common types of attack in this disease:

1. Sixteen of the 30 patients had transient symptoms. Unilateral partial occlusion of the vessels was found in 11 of these 16 patients. Also in this clinical group there was one case of total occlusion, one of bilateral partial occlusion, and three of a combined lesion (i.e., a total occlusion of one side and a partial obstruction on the opposite).

2. Seven of the 30 patients had progressive symptoms. Of this group, two patients had partial occlusions, three had total occlusions, one had bilateral partial occlusion, and one had a combined lesion.

3. The remaining seven patients were represensative of a sudden, catastrophic onset. Of these, one proved to have a partial occlusion, and six had total occlusions.

Table 1

FREQUENCY OF TYPE OF ATTACK AND TYPE OF OCCLUSION

Type of Attack	Number	Partial Occlusion	Total Occlusion	Bilateral Partial Occlusion	*Combined* Occlusion
Transient	16	11	1	1	3
Progressive	7	2	3	1	1
Sudden	7	1	6	0	0
Total cases	30				

Table 2 shows the lesions that were demonstrated angiographically. Note the decided tendency for the atherosclerotic plaque to occur on the left side, a tendency which has been reported by other authors.[14,21] The reason for this phenomenon is not known, although it may be related in some way to hemodynamics. No side effects were noted in any of these patients during or following angiography. As indicated in this table, 23 bilateral and 5 unilateral angiograms were performed. We believe that bilateral angiography should be employed in all cases in which surgical intervention is contemplated. With preoperative knowledge of the health and patency of the contralateral artery, one can decide whether or not a temporary bypass shunt should be used and thereby prevent complete occlusion of the one remaining artery.

TABLE 2

FREQUENCY COMPARISON, ACCORDING TO SIDE INVOLVED, OF PARTIAL AND TOTAL OCCLUSION

Bilateral (23) Side	Normal	Partial Occlusion	Total Occlusion
Right	13	7	3
Left	4	13	6
Unilateral (5)			
Right	....	1	....
Left	....	1	3*

*1 acute, within two hours after sudden onset

Table 3

AGE INCIDENCE AND FREQUENCY OF ASSOCIATED DISEASES

Age	Number	Heart Disease	Hypertension	Diabetes	Miscellaneous
40-50	8	1	3	0	1
50-60	4	1	2	1	2
60-70	12	8	9	4	5
70-80	6	5	5	0	3
Total	30	15	19	5	11

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*Hollenhorst's report of a 72% significant decrease in retinal arterial pressure on the affected side in cases of proven carotid insufficiency certainly is noteworthy and suggests that this method should be used more frequently.

Table 4

NUMBER AND TYPE OF LESIONS SUBJECTED TO SURGICAL TREATMENT AND POSTOPERATIVE CLINICAL STATUS

Type Occlusion	Total Number	Number Operated Upon	Blood Flow Restored	Postoperative Status Improved	Same	Worse	Died
Partial	23	19	18	13	2	1	3
Total	13	11	1	2	8	1	0

Table 3 presents the incidence by age, of carotid arterial occlusion and of associated diseases, including hypertension.

Results

Table 4 presents the results of surgical therapy according to the type of occlusion. Of the total group, 15 patients (50 percent) were improved clinically as a result of surgical treatment; 10 (30 percent) were unchanged by the surgery, 2 (6 percent) were worse, and 3 (10 percent) died. Of 23 partial occlusions, only 19 were subjected to operation; this was because four of these patients had combined lesions, and operation on the totally occluded side was effected. As can readily be ascertained from this table, only partial occlusions are amenable to surgery.

The exception to this statement is the patient with acute total occlusion occurring only a few hours before surgical treatment is effected.

In the only case of this kind in the series, it was possible to re-establish blood flow five hours after sudden onset of aphasia and contralateral hemiplegia. The second patient who improved after total occlusion was a young woman with a progressive onset of symptoms. At surgical intervention she had an extremely small, nonpulsatile, fibrotic cord representing the internal carotid artery. In retrospect she would have been expected to have improved spontaneously. The slowly progressive onset and the youth of the patient probably were important factors in the development of adequate collateral channels.

The three deaths all occurred within the first week after surgical intervention. One of these three patients was a 76 year old man who had had paralysis agitans for ten years. He bled from the wound postoperatively, required a tracheotomy, and eventually died of pulmonary complications. Another patient, operated upon after the administration of local anesthesia, had a sudden onset of aphasia and hemiplegia just as the skin incision was being made. Apparently the incomplete obstruction became complete. Although the blood flow was restored, the patient died one week later. In the third patient a dissecting aneurysm developed in the common carotid artery (below the level of the endarterectomy); the patient became hemiplegic and aphasic, and died.

Of the 13 patients listed as improved, seven have had follow-up angiograms two to four months after surgical treatment. Table 5 reveals the results of these studies. The arteries in six patients were found to be patent, and in one patient totally occluded. The period of follow-up was from 2 to 24 months. All, except the two patients treated most recently, were given anticoagulants for six to eight weeks postoperatively with no apparent untoward effects.

Table 5

FOLLOW-UP ANGIOGRAMS ON PATIENTS WITH PARTIAL OCCLUSIONS WHO WERE IMPROVED CLINICALLY

Patent	6
Occluded	1
Total	7

Table 6

TYPE AND NUMBER OF OPERATIONS PERFORMED

Type of Operation	Number
Endarterectomy	18
Endarterectomy + patch	1
Graft Bypass	1
Exploration only	10
Total	30

Table 6 illustrates the type of operation that was performed. Thromboendarterectomy plus a Teflon patch was used in one case, and a bypass Teflon graft was used once. Since in the remaining 10 cases surgical exploration revealed total occlusion of the vessel, no definitive procedure was effected in these cases. Temporary bypass shunts at the time of surgery were employed in two instances.

All but three of the surgical procedures were performed under general anesthesia. The time of total occlusion of the blood vessel has varied from 10 to 30 minutes, with an average total occlusion time of 13 minutes. Prior to occlusion, 25 mg. heparin was administered intravenously. Following occlusion a heparin solution (10 mg. heparin-50cc. saline solution) was instilled directly into the arteries proximal and distal to the occlusion.

All the lesions were atherosclerotic, and the atheroma generally peeled out easily with the attached intima and a portion of the media. Prior to completion of the closure of the arteriotomy, the occluding clamps were released in definite sequence (i.e., common carotid, external carotid, and internal carotid clamps) in order to "flush out" any bits of debris and clot that might have accumulated. After repair of the arteriotomy was complete the common and the external carotid artery clamps were removed in the hope that any lingering particles of debris or clot could be flushed up the external carotid system. Finally, the internal carotid artery clamp was removed. The patients were permitted to walk the following day.

Figure 1 illustrates a carotid angiogram (A) of a patient who entered the hospital with symptoms of transient attacks of insufficiency of the left carotid artery. Two months after carotid endarterectomy the patient was free from symptoms. The carotid angiogram (B) taken at that time revealed that the internal carotid artery was free of luminal constriction, and the intracranial vessel filling was observed to be excellent.

Discussion

The restitution of function in cerebrovascular insufficiency depends in part upon the development of an adequate collateral circulation. The latter in turn requires the maintenance of an adequate blood pressure, blood flow rate and adequate vascular channels. Brain[36] has stated: "The most important fact about the regulation of the cerebral circulation is its peculiarly close dependence upon systemic blood pressure." Therefore, a major factor in the production of transient cerebral ischemia is frequently the superimposition of a diminished systolic blood pressure upon a cerebral blood flow that is already severely compromised by an occlusive process. The fact that many patients suffering from cerebral vascular occlusive disease experience more serious attacks of insufficiency during sleep or upon sudden assumption of an erect position is readily explained on the basis of hypotension. Herein lies the danger of hypotension during surgical intervention. Attacks of cerebral insufficiency following myocardial infarction may be secondary to hypotension, cerebral embolism, or both. As many authors[36-38] have warned, prolonged bed rest for elderly people and vigorous attempts to reduce blood pressure in hypertensive patients may produce hypotension with concomitant cerebrovascular insufficiency. Conversely, a rise in systolic blood pressure with resumption of physical activity is frequently accompanied by amelioration of symptoms of cerebral vascular embarrassment.

Equally important in compensating for insufficiency is the availability of adequate vascular channels for development of collateral circulation. Of major importance in extracranial carotid insufficiency are the anastomoses between the external and internal carotid arteries. Under normal conditions the external carotid artery does not contribute to the arterial supply of the brain; rather it is primarily concerned with supplying the extracranial structures of the head and neck. But with reduction of the lumen of the internal carotid artery to one-half or less, these collateral channels enlarge and carry an additional arterial blood flow to the brain. Anastomotic channels between the internal and external carotid systems develop in four locations; a) between the ophthalmic and internal maxillary arteries, b) between the ophthalmic and superficial temporal arteries, c) between the ophthalmic and external maxillary arteries, and d) between the occipital branch of the external carotid and vertebral arteries.[32,33]

The circle of Willis is likewise extremely important in the establishment of an adequate collateral circulation. The anatomic structure of the circle of Willis is "normal" in only 50 per cent of all individuals. The many anomalies which may involve the structure include: absence of the anterior communicating arteries, hypoplasia of the proximal portion of one or both anterior cerebral arteries, incompleteness of the circle itself, and hypoplasia of one or both posterior communicating arteries. In the presence of such anomalous development, occlusive disease involving one or more of the vessels supplying the circle of Willis may greatly embarrass adequate collateral circulation. Therefore, in some instances, vascular insufficiency may be predetermined during embryonic stages.[32]

The effect of a gradually increasing, discrete, narrowing in the internal carotid artery in the neck will depend upon the efficiency of the collateral circulation to the ipsilateral hemisphere. As discussed above, collateral circulation depends on maintenance of an adequate systolic blood pressure and blood flow, the development of collateral channels via the external carotid system, and the developmental anatomy of the circle of Willis. If one or more of these factors are impaired, inadequate oxygenation of a part of the brain may ensue and transient symptoms will develop. Such instances have been called "hemodynamic crises."[38]

When presented with a patient who has had a so-called "little stroke," one should immediately suspect the possibility of extracranial arterial insufficiency. More than half the patients in our series presented themselves with transient attacks. The diagnosis in those cases with a progressive or sudden onset may be more difficult, but the possibility of an extracranial arterial lesion should be remembered in the differential diagnosis. We have relied upon the presence of a carotid bruit, or decreased pulsation, plus the clinical history in making an initial diagnosis. However, we regard angiographic visualization as essential in establishing the definitive diagnosis.

As our data indicate, the best results from surgical treatment are obtained in cases of partial occlusion occurring in patients whose blood flow can be restored at the time of operation. An exception to this statement is the occasional sudden total occlusion that can be treated surgically within a few hours after onset of the neurologic deficit. Our one patient with sudden total occlusion responded favorably, and other authors have noted good results in such individuals. For obvious reasons, patients with long-standing total occlusion of the internal carotid artery cannot be considered candidates for surgical intervention. The initial hope that blood flow could be re-established in some of these patients led to the high number of explorations in known cases of total occlusion. Our poor results in surgical treatment of prolonged total arterial occlusions have been borne out in the findings of other authors.[7, 12, 14, 16, 19-22] The ideal candidate for surgery is an otherwise healthy individual who suffers from transient and reversible symptoms.

The natural history of atheromatous narrowing of a carotid artery is unknown. Some individuals have severe disablement with only slight narrowing of one of the quartet of arteries supplying the brain. On the other hand, many persons survive complete obliteration of one carotid artery for many years without symptoms. Some have even been noted to survive bilateral carotid occlusion.[36,39] The question may therefore be raised, why should endarterectomy be performed? The answer to this question is three fold: First, the presence of a symptomatic partial obstruction may lead to ischemia and cerebral infarction during periods of hypotension such as occur with sleep. In other words endarterectomy can be performed to prevent transient symptoms from becoming permanent. Secondly, a partially obstructing lesion may be an embolic source. Lastly, an additional pathway for blood flow to the brain is provided, and although the immediate result may not be significant, it may provide insurance for a future time when one or more of the remaining supplying vessels may become involved with a similar process.[21]

Our follow-up on patients who were improved following operation varies from four weeks to two and one-half years. All of these have continued to be free of their previous symptoms. On this basis it is felt that carotid endarterectomy has a definite place in the treatment of some forms of extracranial vascular disease.

Summary

1. The signs, symptoms, and procedures for diagnosis of extracranial arterial disease in the neck have been described.

2. A series of 30 cases of proven carotid artery occlusive disease has been presented and the surgical treatment discussed. Results of the surgical treatment are given.

3. Some of the factors involved in production of symptoms with cerebral vascular insufficiency have been outlined.

4. We have concluded that carotid endarterectomy is an effective means of treatment in those cases with partially obstructing lesions and transient, reversible attacks.

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Finger Contractures

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In this brief presentation, we wish to point out a useful and simple procedure for the correction of cutaneous contractures of the flexor surface of the fingers or hand. For purposes of this discussion, we have limited the problem to skin and subcutaneous contractures without flexor tendon fixation and with minimal joint capsule contracture.

These skin contractures usually follow burns, trauma, or infection, and obviously, the best treatment is their prevention. Contractures from burns may involve only the skin or the deeper structures as well. Infection secondary to traumatic tissue destruction produces a similar deformity. A very contracted scar may result from an incision placed across the flexion crease of the finger or palm.

Preventative measures include the correct placement of operative incisions in the fingers and hand, following the creases and the mid-lateral region of the fingers and the skin creases of the palm. Early closure of the grossly traumatized or burned hands by the use of free skin grafts will minimize the infection and resultant cicatrization. With an acute contaminated open wound, closure of the wound with a free skin graft of only moderate thickness would be preferable to a thicker graft. Serrated grafts with angles going into the direction of the folds of the skin have less tendency to form skin contractures at the graft edges than do oval or circular grafts. Thus, if the edges of the wound cross the skin creases, it is better to incise the skin along the fold as a "V" to interrupt the edge of the wound crossing the flexor creases perpendicularly. The graft is then sutured into these "V" extensions along the creases.

With application of the above principles, contractures of the flexor surface of the fingers or hand due to cutaneous shrinking can be minimized. Unfortunately, these principles are not or can not always be applied in the care of the acutely injured hand, and contractures of varying degrees result. (Figure 1)

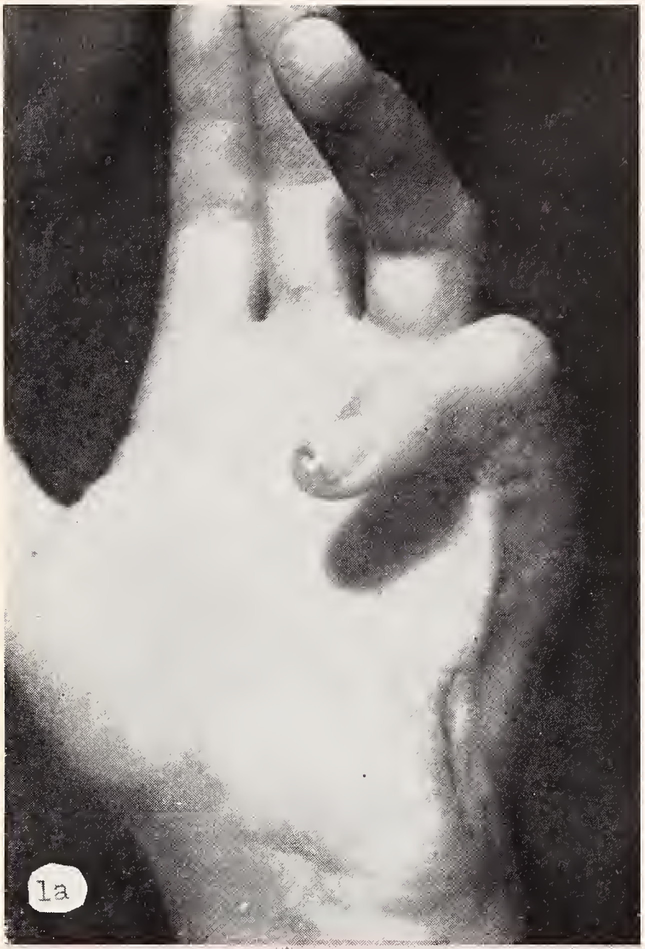

Fig. 1a. Cutaneous contracture of the fifth finger from an old traumatic injury to the hand with loss of skin in the involved area.

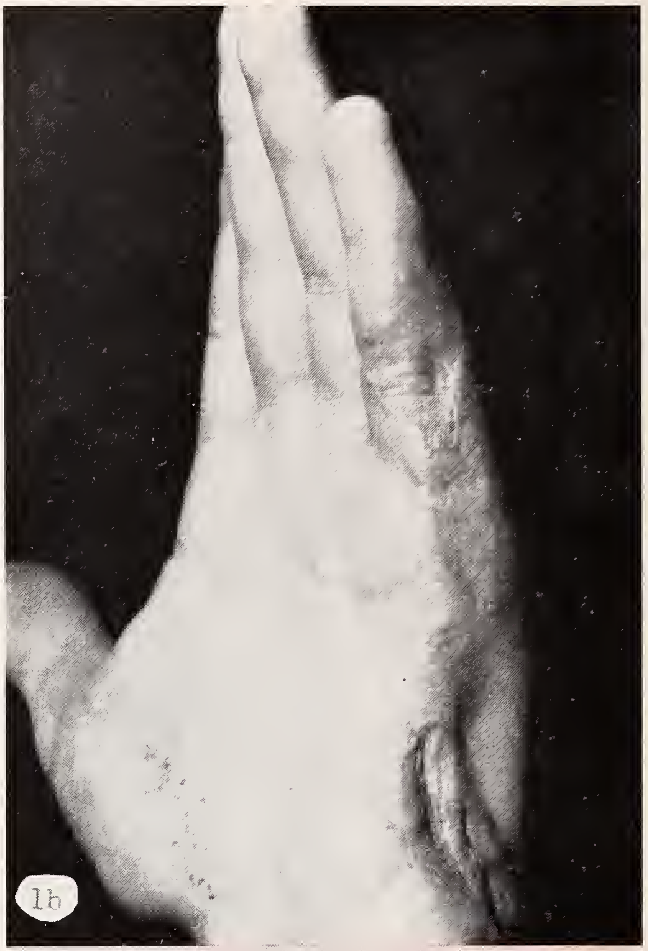

Fig. 1b. Result three months following corrective surgery. A transverse incision was made across the dense scar band allowing the finger to be brought into extension. The transverse incision was carried well into the mid-lateral portion of the finger. Digital nerves and vessels were isolated and preserved during this dissection. A thick split-thickness skin graft was then applied to the resultant diamond-shaped defect. A padded metal extension finger splint was worn for six months according to the program described in the text.

In this presentation, we wish to present only one of the procedures that is useful in correcting the deformity. This is not to minimize the use of the very important Z-plastic principle which is especially useful if the scar band is narrow and the adjacent skin is of good quality. Often the Z-plastic is used in conjunction with a free skin graft. Also, with more extensive injuries in which the flexor tendons are adherent to the scarred skin, coverage with a thicker blood-carrying pedicle flap will likely be required. But for a great many of the surface contractures of the hand, particularly the fingers, a very adequate correction can be obtained by releasing the cutaneous contracture and applying free skin grafts to the areas then deficient of skin. Though a thin free graft is usually used to cover the contaminated acutely injured hand, at this later time, when contamination is no longer a problem, thicker skin can and should be used to cover the flexor surface defect. In most cases, and especially in children, the graft should be of full-thickness skin. With full-thickness grafts, more elastic fibers are included, in contrast to thin split-thickness grafts which have fewer and have a pronounced tendency to contract postoperatively.

The technical details involved in releasing the contracture and applying the skin grafts can be summarized briefly as follows: Incisions are made transversely across the scarred area in the region of the flexion creases. This incision should be carefully deepened with every effort being made to preserve the digital nerves and vessels. As the contracture is released and extension of the fingers or palm is accomplished, it will be noted that a diamond-shaped area devoid of skin exists. The ends of the incision should be extended well into the mid-lateral portion of the finger to completely release the scar bands. Multiple incisions and releases (and therefore, multiple smaller skin grafts) are preferable to one large graft. Similarly, there is little to be gained by excision of large amounts of scar tissue over simple transverse incision and release of the contracture and coverage by a free graft.

Thick grafts are then sutured into these areas and the sutures left very long. All serum is expressed from under the graft and a compression splint is tied in place over the graft, using the long sutures. An additional supportive dressing is applied, and the hand dressed to prevent movement. In contrast to most skin grafts, which should be dressed and examined at about 48 hours postoperatively, these small grafts on the fingers, which are difficult to redress adequately, can be left for five or six days before initial dressing.

After 2 weeks, when the grafts have adhered to their bed, the fingers must be held in extension to prevent the shrinking of the free graft and the contracture from reforming. This is most important and without keeping the grafts stretched out, the end result will not be satisfactory. An easy and simple method to minimize graft shrinkage is to have a padded metal splint prepared by an orthopedic brace maker. This splint can be made light and comfortable and should hold the involved finger or fingers in extension but will not restrict motion of the normal fingers. Initially, this splint should be worn most of the time, with three or four one-hour periods daily with the splint off during which active flexion and extension is carried out. One obviously should not hold the finger in extension all of the time. After several weeks of using the splint, extension of the fingers is usually quite adequate, and the splint can be used fewer hours daily. At this stage, a convenient program is to leave the splint off during the day and to wear it only during the night. Since free skin grafts have a marked tendency to contract, the brace should be worn at night for about six months. (Figure 1b)

Summary

We have reviewed a method that is very useful in the correction of many of the cutaneous flexion contractures of the fingers and palm. The method is simple and does not require prolonged hospitalization. By prolonged extension of the treated fingers, thus preventing the grafts from shrinking and the contracture from reforming, a satisfactory result can usually be obtained.

WHAT'S YOUR DIAGNOSIS?

A fifty year old, previously well, railroad conductor noted the onset of mild "burning" distress across the mid-abdomen a week prior to admission. Three days prior to admission he developed intermittent crampy pains in the left upper abdomen. There was no nausea, vomiting, or loss of appetite. His bowel continued to move with a normal appearing stool. His past history was negative except for Rheumatic Fever at age thirteen and a hemorrhoidectomy a year previous to admission.

Physical examination was negative except for left upper abdominal tenderness without distention, rigidity, or rebound. There was mild left costo-vertebral angle tenderness.

Laboratory studies showed a Hemoglobin of 14 gm %, a WBC of 7,000 with a differential of 57% pmn's and 39% lymphocytes. The sedimentation rate was 9 mm in one hour. The urinalysis was normal. Serum Amylase was normal. X-rays of the chest and abdomen were normal. The ECG was normal. Upper GI x-rays with small bowel follow-up were normal. On the third hospital day the diagnosis became evident. For the answer see page 284.

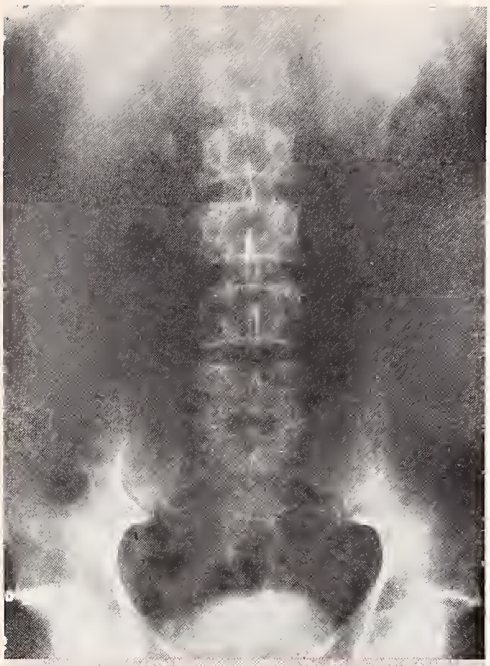

Fig. 1. Excretory urogram showing normal right kidney and poor left renal function.

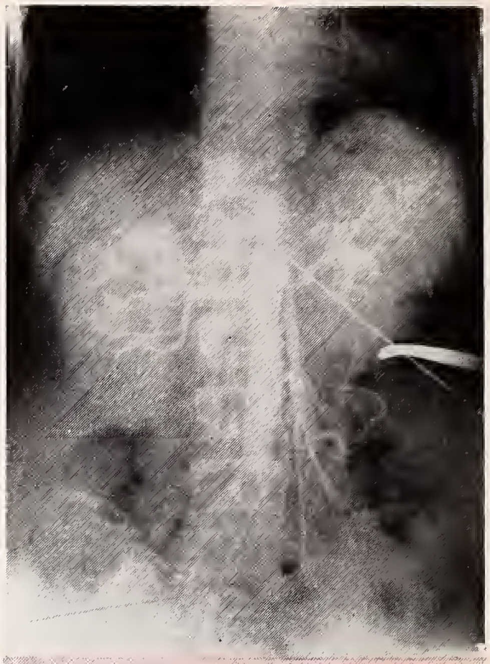

Fig. 2. Aortagram showing high grade partial obstruction of left renal artery.

Cure of Hypertension

An interesting case report detailing the value of careful study of the patient with hypertension to ascertain the possibility of relief of the syndrome through correction of renal artery stenosis. All practicing physicians should be alerted to the possibility of surgically correcting this syndrome, and can benefit from the reasonable stages of investigative procedure outlined here.

The syndrome of hypertension associated with partial obstruction of a renal artery is synonymous in the minds of all physicians with the term "Goldblatt Kidney." This is proper since it was Goldblatt[6] who clearly established the relationship of decreased renal blood flow and hypertension in a series of classical animal experiments. Goldblatt gives credit to Bright[2] for the basic idea that hypertension might be of renal origin. Long before human blood pressure measurement was practiced, Bright observed that in cases of cardiac hypertrophy not obviously due to intrinsic cardiac disease or extrinsic vascular abnormality, there is found almost without exception some disease of the kidneys. This great clinician suggested that a chemical substance resulting from the renal disease was the cause of cardiac hypertrophy by effecting an increased action of the heart and inducing increased pherovascular resistance. One hundred years later, it now seems established that renal ischemia causes hypertension in the following manner:

Renin:
An enzyme from the kidney enters the blood stream through the renal vein and acts upon;

Hypertensinogen:
A globulin in blood plasma to form;

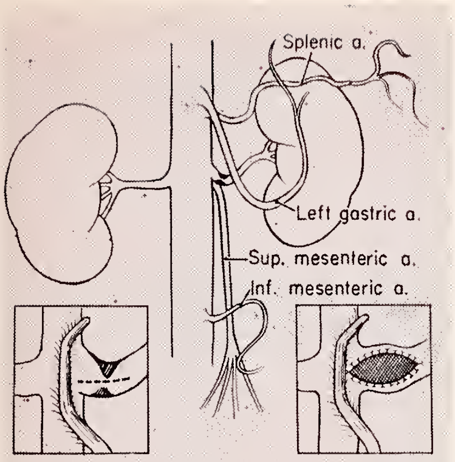

Fig. 3. Method of surgical repair of left renal artery.

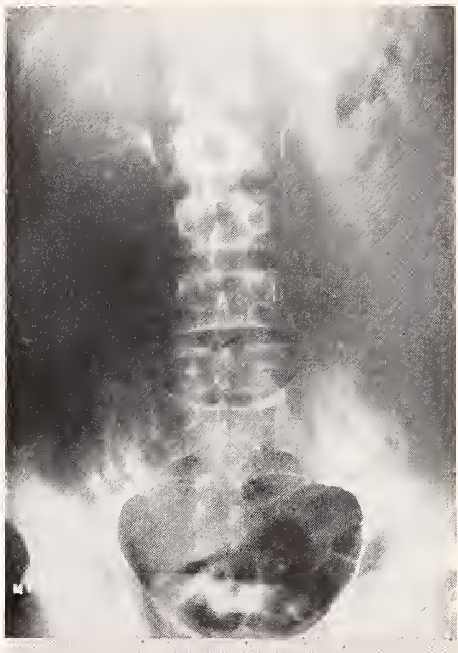

Fig. 4. Post-operative excretory urogram showing normal left kidney.

by Relief of Renal Artery stenosis

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Hypertensin:
A polypeptide which is the active vaso-constrictor substance producing hypertension.

Goldblatt's work provided the interesting situation of the experimentalist having produced a disorder in animals that probably existed in humans, but had not yet been recognized clinically. It had been noted earlier that cure of hypertension incidentally accompanied nephrectomy in an occasional case performed primarily for a urologic disorder.[4,13] However, in 1937, Butler[3] was the first to remove a diseased kidney for the deliberate cure of hypertension. In 1944, following a critical survey of the reported data, Yuile[16] concluded that a mechanism similar to that responsible for the production of hypertension following the application of a clamp to the main renal artery in animals is capable of acting in human subjects. Final proof of this was obtained when Freeman[5] in 1954 demonstrated renal artery obstruction in a hypertensive patient by means of aortography and effected cure of the hypertension by endarterectomy of this vessel. The following illustrates the result obtainable from reno-vascular surgery in a selected case.

Case Report

G. H. (S.H. 10250) A 39 year old male consulted his ophthalmologist because of failing vision in the left eye. He was admitted to the Swedish Hospital, Minneapolis, Minn., on June 27, 1960, where he gave the history of first having noted decreased vision approximately 10 days earlier. He also complained of frequent, severe, dull to throbbing headaches. The past history was significant in that the blood pressure in May, 1959, was measured at 120/78 mm. Hg. at the time of an insurance examination. The history by systems was normal except as noted in the present illness.

Physical examination revealed a well developed, rather thin 39 year old male who was alert and cooperative. The blood pressure was 230/150. The femoral pulses were normal. Examination of the eyes revealed the visual acuity to be 20/20 O.R. and 20/200 O.S. The vitreous was clear. Fundoscopic examination of the left eye showed blurring of the disc margin and retinal edema. Physiological cupping was present and venous pulsation was evident. There were several superficial flame shaped hemorrhages and scattered hard and soft exudates. The right eye was normal on fundoscopic examination. The remainder of the physical examination was normal. Repeat fundoscopic examination on July 1, 1960, showed retinopathy developing on the right with exudates and hemorrhages of the same character as seen in the left eye.

The laboratory reported the hemoglobin to be 16.2 grams. The white blood cell count was 16,150 with a normal differential. The erythrocyte sedimentation rate was 16 mm. in one hour. Urinalysis revealed pH 6, specific gravity 1.014, albumin 3+, glucose negative, WBC's 4 to 6 per high power field, casts 6 to 8 finely granular and 40 to 100 hyalin casts per low power field. The BUN was 21 mg. percent, serum proteins were 5.6 gm. percent with albumin 3.1 gm. percent. The urine albumin loss was 46.8 grams in 24 hours. The anti-streptolysin O. titer was 12 Todd units. A regitine test performed June 30, 1960, was negative.

An electrocardiogram was interpreted as showing left strain pattern. X-rays of the chest and skull were normal. An excretory urogram on July 8, 1960, showed the right renal outline to be 3 to 4 cm. longer than the left. Contrast appeared promptly on the right to outline a normal collecting system, pelvis and ureter. On the left, a minute amount of contrast was seen in the calyces and a dense nephrogram was obtained. The calyces, pelvis and ureter were never filled well enough to evaluate. (Fig. 1.) A nephrogram was obtained on films taken up to 24 hours after injection of the contrast material, but was unusually striking on the one hour film.

At cystoscopy on July 12, 1960, the left retrograde pyelogram was normal. Split function tests at this time showed a good flow of urine with trace of albumin and 50 to 60 red blood cells from the right kidney. On the left there was a very scant flow of urine which showed no albumin, a moderate number of epithelial cells, and only occasional rbc's. Indigo carmine injected intraveneously appeared within 4 minutes on the right side but was not seen on the left side up to 15 minutes. On July 13, 1960, a trans-lumbar aortagram using 30 cc. of 50 percent Hypaque solution demonstrated a high grade partial obstruction at the origin of the left renal artery (Fig. 2).

At operation on July 18, 1960, the left kidney appeared grossly normal. The left renal artery had a rather faint pulse and easily palpable thrill which extended proximally to near the origin of this vessel. The left renal artery was isolated from the circulation by means of a partially occluding clamp placed on the aorta. A longitudinal incision was made over the area of narrowing in the renal artery and extended out onto the wall of the aorta for a distance. An elliptically shaped gusset of knitted Teflon, approximately 2 cm. in length by 1 cm. in width, was then sutured in place to the margins of the longitudinal incision in the anterior wall of the renal artery (Fig. 3). The clamps were released after approximately 25 minutes. There was now a good pulse in the renal artery and the thrill was absent. The blood pressure, which had been elevated to over 200 mg. Hg. systolic throughout the procedure, dropped immediately to 140 systolic and then gradually rose to stabilize in the region of 160 mm. Hg. systolic. Post-operatively, the patient did well. (Fig. 5.) On the second post-operative day, he volunteered that he had had no head-

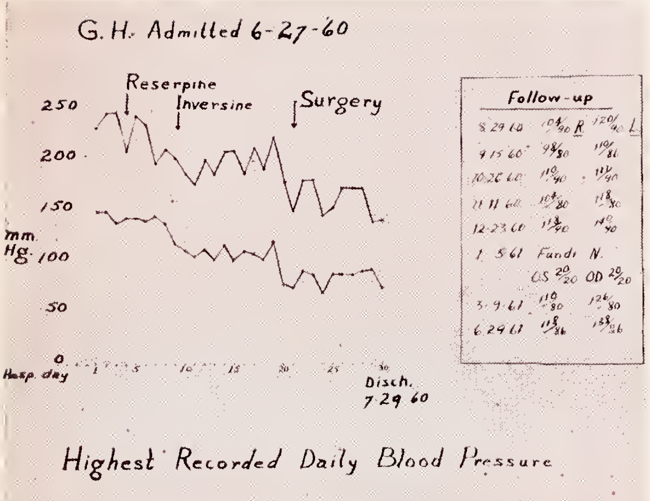

Fig. 5 Blood pressure record.

aches since surgery and believed that his vision was improved. By July 28, 1960, fundoscopic examination revealed striking regression of the retinopathy with clearing of the edema in particular. Post-operative urinalyses were entirely normal except for a trace of albumin. On the ninth post-operative day, an excretory urogram was normal except that the left kidney was still approximately 2 cm. smaller than the right. (Fig. 4.) The blood pressure ranged from 120/90 to 160/100 up to the time of his discharge from the hospital on July 29, 1960.

Periodic examination after discharge from the hospital showed complete clearing of the retinopathy by January, 1961, and vision was 20/20 in each eye. At monthly follow-up examinations, the blood pressure was ranged between 98/80 to 140/90 and was 130/90 at the time of the most recent examination on June 29, 1961. (Fig. 5.) The patient feels well and is working full time as an electrician.

Discussion

The dramatic and gratifying result obtained in this case confirms and adds to the reported experience of others.[12] We agree with the statement that every hypertensive patient should be evaluated in terms of adrenal dysfunction (aldosteronism or pheochromocytoma), unilateral renal parenchymal disease, or unilateral or bilateral renovascular disease.[8] The history of sudden onset of severe hypertension in a previously normotensive person or the sudden increase in the blood pressure of a previously chronically hypertensive patient or flank pain followed by the appearance of hypertension should alert us to the possibility of a reno-vascular basis for the hypertension. This should lead to performance of an excretory urogram, perhaps modified by exposing films at 1 minute intervals to the usual 5 minute initial film, in order to pick up minimal changes in excretion.[10] Delayed function and a decrease in the length of the kidney of even 1 or 2 cm. is suggestive of a reno-vascular basis of hypertension. The radioactive renogram as described by Winter[15] has been suggested as a screening procedure. However, serious doubt concerning its usefulness has been cast by the report of Moses, et al.,[11] The intravenous urogram should be followed by cystoscopy with ureteral catheterization for obtaining a retrograde pyelogram and for the simultaneous collection of specimens. The rate of urine flow from each kidney should be noted and the urine collected should be examined for sodium, chloride, and the specific gravity, as well as the routine procedures. Indigo carmine and PSP should be given intravenously and the relative excretion rates noted. Final proof and documentation of the presence of a reno-vascular lesion is obtained only by angiographic studies. With the current practice of using small amounts of a relatively non-irritating contrast substance, trans-lumbar aortography carries very little risk. The aortogram will accurately locate and outline the obstructing lesion so that the surgical approach can be intelligently planned and relief of the obstruction obtained by employing one of a number of vascular surgical techniques.[9]

It has been estimated that 0.5 to 2.0% of all hypertensive patients have surgically correctable renal lesions,[14] or to put it another way, Arbuckle[1] states that the renal hypertensive syndrome comprises from 4 to 5 admissions per annum in a 1000 bed general hospital. If this is true, many of us should have the opportunity of establishing this diagnosis in the course of our practice. As illustrated by this case report, the alert ophthalmologist may be the key person in suspecting the disorder and initiating proper investigation. These patients have so much to gain from a proper diagnosis and early treatment (or conversely, so much to lose from delayed treatment), that we should all keep our index of suspicion high regarding this disorder.

Summary and Conclusions

A case of hypertension caused by obstruction of the left renal artery and apparently cured after relief of that obstruction is presented.

The routine to be followed in establishing this diagnosis is briefly recalled.

The great gain to be achieved from proper diagnosis and treatment demands that we search out these cases and remove the cause of hypertension by reno-vascular surgery with preservation of the affected kidney whenever possible.

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There is so much good in the worst of us, and so much bad in the best of us, that it behooves all of us not to talk about the rest of us.—*Stevenson*

MY SYMPHONY

To live content with small means; to seek elegance rather than luxury; and refinement rather than fashion; to be worthy, not respectable; and wealthy, not rich; to study hard, think quietly, talk gently, act frankly; to listen to stars and birds, to babes and sages, with open heart; to hear all cheerfully, do all bravely, await occasions, hurry never. In a word, to let the spiritual unhidden and unconscious grow up through the common. This is to be my symphony.—*William Henry Channing*

The orthopedist can be an important part of the team managing a patient with serious rheumatoid disease.

Advances in Surgical Treatment of the Rheumatoid Hand

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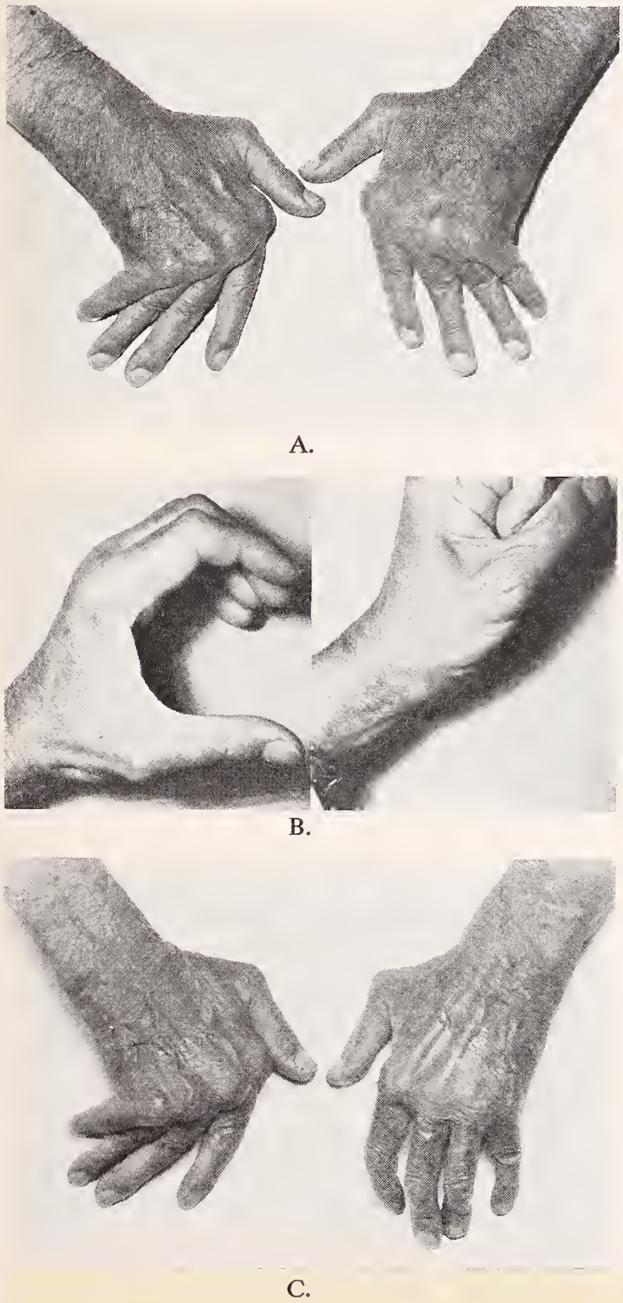

Figure **a.** Rheumatoid deformity of hands prior to surgical treatment. **b.** Ability of patient to open hand and to grasp, 1 year after arthroplasties on metacarpophalangeal joints and relocation of extensor tendons of left hand. **c.** Correction of deformity and improvement in function maintained 4 years after operation on left hand. Note: Surgical correction of right hand was never undertaken because of patient's age (73 years) and severe bleeding from a gastric ulcer after operation on left hand.

DEFORMITIES of the hand are common concomitants of rheumatoid arthritis. The prevention and correction of these deformities has become of increasing interest to the rheumatologist and hand surgeon in the last decade. This has resulted from better understanding of the pathogenesis of these deformities and improved technics of dealing with them surgically. It is no longer considered necessary to defer surgery until the process of rheumatoid arthritis has burned itself out, or until the erythrocyte sedimentation rate has returned to normal.[1] Rather, an active program with emphasis on prevention and correction of the deformity should be followed throughout the exacerbations and remissions of the disease. This program ideally should be a combined program of care under the direction of a rheumatologist, a physiatrist, and a hand surgeon.

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The primary functions of the hand are those related to the ability to perform pinch and grasp. The object of treatment should be to preserve these functions. Some patients will have minimal involvement of the hand by the rheumatoid process which does not necessitate treatment. Others will benefit from physical measures such as active exercise, contrast baths, and splinting.[2,3] Still others will have adapted their hands to performing necessary function through the use of substitute movements. In the patient with increasing deformity or crippling loss of function, surgical intervention may be of some benefit. The restoration of the hand to a more normal appearance is not in itself sufficient reason for an operation. The patient must have the motivation to undertake the long and arduous rehabilitation measures necessary to regain function of the hand after surgical treatment.

Pathogenesis

Microscopically, rheumatoid arthritis in the hand, as in other joints, is characterized by perivascular infiltration of lymphocytes and plasma cells. There is proliferation of subsynovial fibrous tissue and synovial membrane which results in a villosynovitis. Not only the joints but also the tendon sheaths are frequently involved. The intrinsic muscles of the hand often undergo spasm secondarily. Inflammation in the synovial membrane of the joints results in the production of a thick, mucinous fluid which distends the joint capsules. Rice bodies may form. The capsule and its ligamentous thickenings are stretched and weakened. Inflammation of the tendon sheath disturbs the gliding qualities of the synovial surfaces, resulting in restriction of the excursion of the incorporated tendons.

The joint deformities in rheumatoid arthritis of the hand, according to Steindler,[4] are produced by the imbalance of muscular stresses acting across inflamed and weakened articular surfaces. The inflamed joints are pulled into the position affected by the predominant antagonists that cross them. The capsule is stretched on the side of the weaker antagonist, and permanent contracture results as the involved structures undergo fibrosis.

Brewerton[5] and Laine and his co-workers[6] have described the typical deformities of rheumatoid arthritis and noted their incidence in separate series of patients with rheumatoid arthritis.

Flexion Deformity of the Wrist

Rheumatoid activity of the radiocarpal joint results in flexion contracture of the wrist due to the force of gravity and greater strength of the flexor muscles.[4] The hand functions optimally when the wrist is dorsiflexed between 30 and 45 degrees. Flexion contracture at this joint results in loss of power in both pinch and grasp. Before distal reconstructive surgery is undertaken, the position of the wrist should be corrected. If a flexed and contracted wrist is painless and some motion is retained, a dorsal wedge osteotomy may be performed through the distal radius. In the event that this is not feasible, an arthrodesis of the wrist is desirable, with the hand in a position of function.[3]

Intrinsic Contracture of the Hand

Contracture of the intrinsic muscles of the hand was described by Bunnell.[7] He noted that this condition is a common accompaniment of rheumatoid arthritis.[8] Normally, the intrinsic muscles of the hand have sufficient excursion to act as flexors of the metacarpophalangeal joints as well as extensors of the distal and middle joints of the finger. When these muscles undergo contracture, a typical deformity is produced in which the metacarpophalangeal joints are flexed and the interphalangeal joints are extended. The proximal interphalangeal joint may be pulled into hyperextension, which relaxes the lateral bands of the extensor aponeurosis. The distal interphalangeal joint then is flexed by the action of the flexor digitorum profundus. Contracture of the adductor muscle of the thumb results in the thumb being adducted against the palm. In this position the hand is unable to open sufficiently for grasping objects, and pinch likewise is restricted by the loss of opposition of the thumb.

This condition is amenable to surgical treatment by a method described by Littler.[9] It consists of excising the oblique fibers of the extensor aponeurosis over the proximal phalanx. The transverse fibers of the extensor aponeurosis that act to flex the metacarpophalangeal joint are retained. Extension of the interphalangeal joints is still possible through the action of the extensor digitorum communis, which acts through the central slip so long as the metacarpophalangeal joint is not permitted to undergo hyperextension.[10] Synovectomy of the metacarpophalangeal joint may be performed simultaneously.

Ulnar Deviation of the Fingers of the Hand.

The ulnar drift or deviation of the fingers at the metacarpophalangeal joints is another characteristic of the rheumatoid hand. Brewerton[5] noted that almost 50 per cent of his patients who had had rheumatoid arthritis for 5 years had varying degrees of this deformity. Ulnar drift is favored by the relatively greater ulnar mobility of the metacarpophalangeal joints and by the ulnar pull of the long tendons to the index and ring fingers. When rheumatoid inflammation occurs in the metacarpophalangeal joints the radial collateral ligament weakens, and the extensor digitorum communis tendon gradually slips toward the intermetacarpal groove on the ulnar aspect of the finger. The extensor aponeurosis is displaced with it. The long extensor tendon eventually subluxates into the intermetacarpal groove and loses its ability to act as an extensor of the fingers. It becomes an ulnar flexor of the metacarpophalangeal joint, thus tending to perpetuate and increase the deformity. The unopposed pull of the intrinsic muscles then acts to subluxate the proximal phalanx on the head of the metacarpal in an anterior and ulnar direction. Eventually, complete dislocation results. The deformity severely limits the function of the hand since the fingers cannot be opened to a satisfactory grasping position, and pinch is limited because the index finger cannot be stabilized to oppose the thumb.

The surgical repair of this deformity varies somewhat with its severity. Thus, at an early stage, before pronounced subluxation of the joints or extensor tendons has occurred, imbrication of the radial oblique fibers and tenotomy of the ulnar oblique fibers of the extensor aponeurosis help to stablize the metacarpophalangeal joints. Synovectomy of the metacarpophalangeal joint may be performed simultaneously.[1] The tendon of the extensor indicis proprius muscle may be transferred to the insertion of the first dorsal interosseous muscle to improve pinch. For the more severe deformity, the metacarpophalangeal joints are exposed through a dorsal transverse incision, after the method of Riordan and Fowler.[11] The metacarpal heads are excised and the necks are shaped into transverse wedges. The excision releases the capsular and tendinous contractures. The proximal phalanx is then repositioned over the metacarpal neck. The radial obliqueness of the wedge helps to stabilize the fingers in a radial directon. Synovectomy is performed prior to repositioning the base of the proximal phalanx. Kirschner wires are often inserted across the proximal phalanx into the metacarpal neck to hold the metacarpophalangeal arthroplasty in a position of approximately 35 degrees flexion. The extensor tendons are replaced over the metacarpals, and the extensor hood is reconstructed. This method has proved superior to fascial arthroplasty (figure).

Finger Deformities

Deformities of the finger and thumb produced by destruction of the joint, ligamentous instability, and muscular contraction are commonly seen in rheumatoid arthritis.[5,6] A “boutonniere” deformity is produced when the central slip of the extensor apparatus ruptures or is weakened at its insertion into the middle phalanx. This results in a flexion deformity of the proximal interphalangeal joint with secondary extension deformity of the distal interphalangeal joint. A “mallet” or baseball finger is similarly seen when the insertion of the lateral bands have been disrupted at the distal phalanx. Occasionally, the attenuated structures may be sufficiently preserved to allow surgical repair. However, if the joints are unstable because of destruction of the joint or rupture of the collateral ligament, primary arthrodesis is the preferred treatment. This may be performed by excision of the articular cartilage and fixation by crossed Kirschner wires.[3] The distal joint is arthrodesed at 30 degrees of flexion and the middle joint at 30 to 45 degrees of flexion.

The thumb is especially susceptible to deformity in rheumatoid arthritis. Brewerton[5] found that involvement of the thumb occurred in 62 per cent of his patients with rheumatoid arthritis. Restriction of opposition is the most frequent detriment to function of the thumb. This is the result when rheumatoid arthritis affects the articulation of the joint at the first metacarpal and greater multangular bones. Contracture of the thenar muscles occurs secondarily. Opposition may be improved by shortening the base of the first metacarpal or by excision of the greater multangular bone.[8] Instability of the metacarpophalangeal or interphalangeal joint of the thumb may markedly interfere with the ability to perform pinch. In this situation arthrodesis of either or both joints may be indicated. The distal joint is arthrodesed in extension and the metacarpophalangeal joint in slight flexion. The distal joint may be arthrodesed in slight radial rotation so that the thumb pad is in a better position to oppose the index finger.

Rheumatoid Tenosynovitis

Rheumatoid tenosynovitis may involve any of the tendon sheaths about the wrist or in the hand. It may occur concurrently with joint manifestations or, less frequently, may be seen as a prodromal condition heralding the onset of polyarticular rheumatoid arthritis. The earliest symptom is frequently morning stiffness of the hand or wrist which improves with activity during the day. Later, painless effusion and palpable nodules may be noted along the course of the tendon sheaths. A dumbbell effusion to either side of the carpal ligament may mimic tuberculous tenosynovitis.[12] This condition disrupts the gliding characteristics of the tendon within the synovial sheath and limits tendon excursion. A distention within the tendon sheath and the encroachment of the villosynovitis on the mesotendon and its blood supply result in degenerative changes within the tendon. Trigger fingers may result from a stenosing tendovaginitis. The stenosis is almost always located at the level of the proximal pulley of the flexor sheath in the distal part of the palm.

When the diagnosis of rheumatoid tenosynovitis is made, conservative treatment by heat, rest, and splinting are advisable. Injections of hydrocortisone into the synovial sheath may not only allay minor flares of activity but also may prevent chronic changes associated with rheumatoid tenosynovitis. Potter and Kuhns[13] recommend this treatment when the palpable synovial proliferations are less than 1 inch in diameter. When the nodules are larger than this or are uncontrolled by conservative measures, these authors advocate synovectomy of the involved tendon sheaths.

Spontaneous Rupture of Tendons

Any of the tendons in the wrist or hand that have an accompanying tendon sheath may undergo spontaneous rupture in Rheumatoid Tenosynovitis.[14] The flexor pollicis longus most frequently parts near its insertion but may rupture under the pulley at the metacarpal neck or near its musculotendinous junction. The extensor pollicis longus ruptures in its course around Lister's tubercle. The extensor digitorum communis is prone to rupture over the distal radio-ulnar articulation.[14-17] This occurs when the ulnar styloid is dorsally dislocated in rheumatoid arthritis; in this condition the tendon of the extensor digiti quinti minimis or the slip to the little finger from the extensor digitorum communis usually ruptures first, and this may be followed by subsequent rupture of the extensor digitorum communis tendons to the ring and long fingers. Spontaneous rupture of the tendon in rheumatoid tenosynovitis is thought to be the result of mechanical attrition acting upon a tendon weakened by tenosynovial inflammation.

The nature of any surgical repair is dependent on the tendon involved and the region in which it ruptures. It may be possible to reinsert the flexor pollicis longus into its insertion in the distal phalanx of the thumb after removing a small portion of degenerated tendon. The extensor pollicis longus and extensor digitorum communis tendons are usually frayed over the length of their excursion around the osseous prominences. Therefore, a free tendon graft is needed for replacement. When the ulnar styloid is dislocated, the distal 1½ inches of the ulna, along with the rheumatoid granulation and osseous debris at the distal radio-ulnar joint, is excised.

Carpal Tunnel Syndrome

The carpal tunnel syndrome is produced by compression of the median nerve against the transverse carpal ligament.[18] Symptoms begin as numbness and tingling in the fingers when the patient is attempting to do fine work. This usually is more noticeable when the wrists are in flexion. Later, the patient may be awakened by burning paresthesia at night, which is relieved by dropping the hands over the side of the bed or vigorously shaking them. Atrophy of the thenar eminence may be seen as a late complication of this condition. Although a number of disorders may produce the carpal tunnel syndrome, it is generally conceded that the most common cause is distention within the carpal tunnel produced by tenosynovitis of the flexor tendon sheaths.[19,20]

Confirmatory tests are helpful in establishing the diagnosis. Tinel's sign may often be elicited in the distribution of the median nerve distal to the transverse carpal ligament by percussing over this structure. Phalen[21] described a test in which an aggravation of the median paresthesia can be produced by having the patient flex the wrist for 60 seconds. Electromyographic studies often demonstrate a prolonged conduction time of the median nerve. The normal conduction time between the sensory fibers of the median nerve at the wrist and the motor division of this nerve to the thenar eminence is less than 4.7 milliseconds.

When the carpal tunnel syndrome is mild, the injection of 37½ mg. of hydrocortisone into the carpal tunnel may result in alleviation of the symptoms. When the condition is well established, section of the transverse carpal ligament would seem to be the procedure of choice.[20] This may be performed through an incision along the proximal one-half of the thenar crease and diagonally across the distal crease of the wrist, with section of the transverse carpal ligament throughout its extent. A small segment of the transverse carpal ligament usually is excised to prevent re-formation. The wrist may be explored if thought necessary by extending the incision in a curved manner along the proximal crease of the wrist. Care is taken not to injure the motor branch of the median nerve. The procedure may be performed with nerve-block anesthesia and tourniquet control. A bulky dressing is applied for 48 hours to control edema. Results of this procedure have been almost uniformly gratifying.

Conclusion

Rheumatoid arthritis involves not only the articular structures of the hand but also the intrinsic muscles and the synovium of the tendon sheaths. Such involvement produces a wide variety of characteristic conditions. An active program designed to prevent deformities during the cyclic exacerbations and remissions of the disease will allow the patients with rheumatoid arthritis to retain a great deal of functional use of their hands. Established deformities usually can be corrected by surgical means. As a rule, the earlier the operation the easier the correction and the less extensive the procedure.

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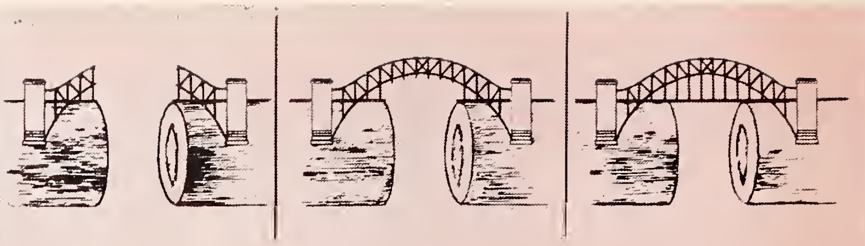

Figure 1. Diagrammatic representations of fracture healing. The callus proliferates from the periosteum, bridges the fracture, and ultimately bony trabeculation is re-established. Reproduced with permission from Urist, M. R., and Johnson, R. W., Jr.: Calcification and Ossification. IV. The Healing of Fractures in Man Under Clinical Conditions. J. Bone & Joint Surg. n.s. 25: 375-426 Apr. 1943.

The authors present several interesting and important principles of fracture healing which can benefit all physicians caring for trauma. Refresh your memory regarding the physiology of the healing process at the same time you store away some "pearls" of a clinical nature.

Healing

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An interest in the basic aspects of the healing of fractures began during the eighteenth century with the classic works of John Hunter in England, Haller in Switzerland and Duhamel in France. This interest increased steadily, so that by the middle 1940's an estimated 5000 papers had been published on this subject.[1]

The sequence of tissue metaplasia in fractures was established by Hunter, who traced the process of immediate appearance of the fracture hematoma, the early replacement of this by fibrocartilaginous callus, the succeeding deposition of bone leading to final trabeculation, and the completion of the healed fracture by the re-formation of the medullary canal and resorption of the excess reparative material. Thus, the basic steps in the healing of fractures that he propounded were (1) hematoma, (2) fibrocartilaginous callus, (3) ossification, (4) calcification and (5) structural reformation. The information supplied by the work-

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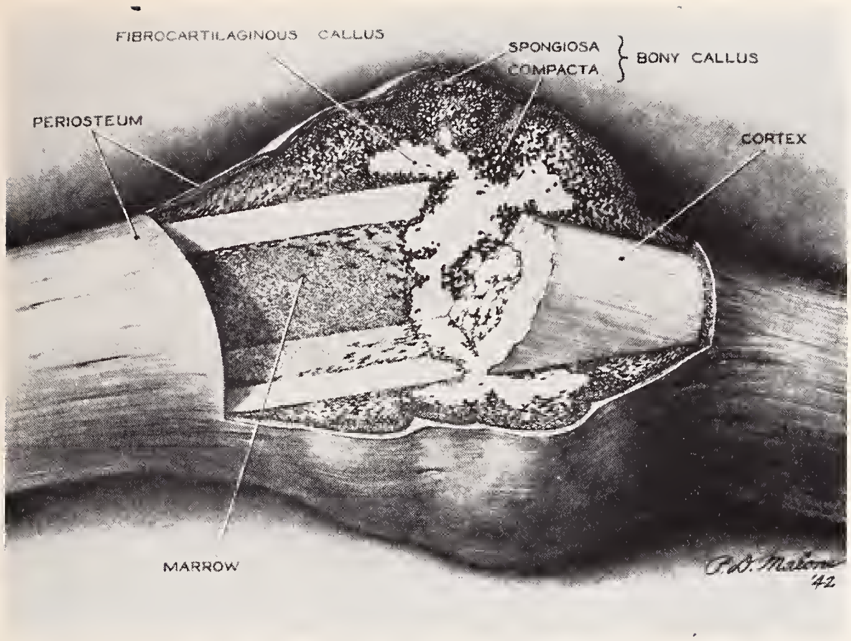

Fig. 2. Process of osteogenesis.

# of fractures

ers in this field who followed Hunter merely filled the interstices of his outline but did not change it.

The three elementary cellular processes concerned with the healing of a fracture are (1) the local vascular network that forms or expands during the healing of fractures, (2) stimulation of scattered local osteoblasts and (3) stimulation of the undifferentiated cells of the cellular, or "cambium," layer of the periosteum. The predominance of the periosteum as the chief source of new bone and the additional role of the endosteum and spongiosa, albeit of lesser importance, constitute at present the generally accepted hypothesis held to explain the source of the osteocytes.[1]

Definitions

Long bones are covered with periosteum and internally surfaced by endosteum. The periosteum consists of an outer layer of collagenous fibers, in which most of the cells are fibroblasts, and an inner "cambium," or osteogenic stratum composed of single fusiform cells in the resting state; this latter stratum becomes a multicellular layer of plump osteoblasts when trauma, such as a fracture, occurs. In the young, this osteogenic layer has many cells, which become depleted in older individuals. The endosteum is a single layer of contiguous cells blanketing the trabeculae of the marrow cavity; the cells vary from osteogenic to osteoblastic in character. The marrow also contains primitive multipotential mesenchymal cells that can form fibroblasts, chondroblasts or osteoblasts, depending on their environment.[2] Osteocytes are osteoblasts that have become embedded in their own collagenous matrix, on which bone salt has formed. All osteocytes are situated no more than 0.1 mm. from a capillary or other blood channel; Haversian canals are formed to fulfill this requirement in the lamellar bone. New tissue formed at the site of the fracture is termed "callus." This term can be modified in respect to the location or histologic composition of the callus.[3] Weinmann and Sicher[4] described an "anchoring" callus located subperiosteally near the fracture ends, a "sealing" callus coapting the marrow cavities, a "bridging" callus spanning the fracture gap, and a "uniting" callus connecting the fractured cortical fragments.

Sequence of Events in Fractures

Injured bone first displays inflammation, then revascularization and finally substitution of the callus by new bone from the adjacent endosteum and periosteum. Flat membranous bones and metaphyses heal by proliferation and direct extension of new bone from the old without the formation of bridging fibrocartilaginous callus. Long, or endochondrally developed, bones heal by preliminary formation of a model of fibrocartilaginous connective tissue through which osteogenesis is drawn into and across the fracture gap from each side.[2] (Fig. 1.) All stages of repair are seen simultaneously in long bones, because the size of the hematoma causes incomplete organization of the core while the periphery already is developing into fibrocartilaginous callus.[5] (Fig. 2.)

A brief outline[5] of the events in the healing of fractures follows:

1. A hematoma forms at the fracture site in 2 to 8 hours.

2. During treatment, the manipulation produces more hemorrhage and the possible inclusion of soft tissue at the fracture site.

3. In 1 to 48 hours, aseptic inflammation occurs in all the injured tissue and organization begins in the hematoma. Fibroblasts arrive from the periosteum, endosteum and marrow cavity. Monocytes and lymphocytes are donated by the hematopoietic system.[2]

4. At 2 to 30 days, the hematoma is encapsulated in granulation tissue and becomes fibrous tissue in which cartilage appears to act as a temporary filling material for bridging the defect. In flat bones, the cartilage is lacking, as already stated. The cartilage also acts somehow as an inductive agent to cause fibroblasts in the vicinity of the callus to convert to osteoblasts and form bone. At this time, fragments of necrotic tissue are being resorbed and living tissue included in the hematoma slowly turns to scar tissue.

5. From 4 days after the fracture to the time of union (but beginning usually by the fifth to the tenth day), an intramembranous type of osteogenesis occurs between the periosteum and shaft, and on the cancellous bone of the medullary canal for some distance back from the gap, so that circular collars of new bone arching across the fracture site are formed on the periosteal and endosteal surfaces. Many connective-tissue cells in the callus are transformed into osteoblasts as the waves of osteogenic material sweep toward them.[2]

Osteogenesis in fractured metaphyses arises simultaneously, without the stage of formation of cartilage, throughout the entire apposing surfaces of the cancellous bone from the fourth day on.

Chondrogenesis occurs between the ends of the bone at the fracture site and results in the formation there of a disk of fibrocartilaginous callus consisting of dense fibrous connective tissue, fibrocartilage, and hyaline cartilage which occupies the radiolucent space in the roentgenogram.[6]

The external collars of bone and the internal, or sealing, callus grow toward each other and progressively replace the disk from without inward, arching over and through the disk.[5]

The growing callus is calcified like cartilage and bone in other parts of the skeleton. An adequate amount of calcium and phosphate ions must be present in the plasma, but an excess is of no value.[7] The values for blood calcium, phosphorus and alkaline phosphatase are not significantly altered during the healing of fractures.[2]

The exact time of appearance of the different stages varies with the age of the patient, the individual bones, the type of fracture (diaphyseal or metaphyseal), the amount of displacement and fixation of the ends of the fracture, and the volume of interposed viable tissue.[5]

The Hematoma

Most authorities view the hematoma as the infiltration ground and initiant for granulation tissue by virtue of the chemical stimulus of protein from necrotic tissue.[4] Ham and Harris[3] differ by considering the hematoma as an obstacle to the waves of osteogenesis. They believe that other workers err in reasoning by analogy to the conditions in soft-tissue wounds, in which granulation tissue actually does invade the clot, and by observing the repair of fractures in cancellous bone, which is accomplished chiefly by osteogenic cells growing through the clot. But these mechanisms are not comparable to repair in long, endochondrally developed bones, according to Ham and Harris. Necrotic material probably does not hinder bony healing and is replaced; massive interposition of pieces of viable tissue disrupts the organization of the callus, however, and interferes with union of the fracture.[5] The hematoma and the highly vascular connective tissue that pushes in from the blood vessels often are called the "procallus."

The Callus

Fibrocartilaginous Callus.—The true callus begins as early as the first week from cells supplied by the torn ends of the periosteum, the endosteum and, later, the perivascular zones and bone marrow. True cartilage appears mainly in fractures of long bones with large defects or displacement. In extremely large defects, an endochondral model is produced, much as in development of the entire bone.

Motion and other stresses cause an increase in the amount of cartilage formed, perhaps by interrupted circulation, although other workers debate this mechanism.[5] Lacroix[8] stated that cartilage acts as an organizer and not only elaborates various skeletal tissues but arranges them in order.

Bony Callus.—Within 24 hours mitotic activity is seen in the periosteum and endosteum some distance back from the fracture site. The first new bone is derived from the resting osteogenic cells of the main fragments. The collars of new bone envelop and gradually replace the fibrocartilaginous callus.

In the first 10 days of healing, calcification occurs almost as the new bone is laid down. At 20 to 50 days as the callus grows more rapidly, almost all of the new bone is sheathed in osteoid tissue. On about the twenty-first day, the intramembranous type of bony collars make contact with the central disk of callus, and replacement and induction begin there.

The primary bony callus consists of coarse fibrillar bone with large, numerous, irregularly distributed osteocytes and layers of osteoid tissue surrounding the trabeculae. It is radiolucent.[4] Nourishment is obtained from large vascular spaces.

The secondary bony callus appears at about 40 to 50 days, after ossification of most of the fibrocartilaginous callus; beginning haversian systems of lamellar bone are laid down with resorption of the initial framework of primary bony callus. The callus and bone are remodeled continuously by resorption and reconstruction according to Wolff's law.[4]

Osteogenesis

The process of osteogenesis in fractured bones may be summarized as follows: (1) new bone is deposited on the cortex of each side of the fracture line; (2) new bone from both fragments arches *over* the fracture line, not *between* the ends, until the fibrocartilaginous callus is penetrated, resorbed and ossified; (3) new compact bone is laid down *from the arch* in the formation of Haversian systems (Fig. 2). No isolated zones of bone form that appear to be spontaneous or metaplastic in origin.[5]

Blood Supply and Its Importance

Healing is rapid in zones with a large collateral circulation, such as the metaphysis. However, circulation is poor in the midshafts of long bones; therefore the callus from the adjoining ends of the fracture builds new vessels, which are usually adequate to accomplish healing unless they are disturbed.[2]

The surgical creation of arteriovenous fistulas in the vessels supplying the fractured limb or attempts to induce new circulation by hyperthermia have not speeded healing.[6,9]

Healing Time

The time required for healing is directly proportional to the total volume of damaged bone, the breadth of the fracture defect, the developmental history of the bone and the regional conditions. Systemic factors play only a minor role unless severe deficiencies exist.[10]

In general, fractures in upper extremities heal faster than do those in lower extremities. Impacted fractures form a microscopic plate of fibrocartilage at the time of injury, and this is rapidly replaced with new bone in just a few weeks.[2] In displaced or separated fractures, the defect is filled with a great mass of fibrocartilaginous callus that requires months or even years to be replaced by new bone.[2]

Spiral fractures heal more rapidly than transverse fractures because of the greater area of apposed bone. Comminuted fractures heal somewhat slower than spiral ones.

In double fractures of the midshafts of long bones, the process of healing follows the direction of flow of the nutrient arteries. The metabolic demands of multiple fractures apparently make no difference in the rate of healing.[11]

About 75 per cent of pathologic fractures of the femur in patients surviving longer than 6 weeks will go on to union.[12]

In open noninfected fractures, healing will begin simultaneously with the initiation of healing of the superficial wound and then will proceed like that in a closed fracture. Infection in the soft tissue near an open fracture, but not in the bone itself, will not hinder union.[4] However, if the bone about the fracture is infected, then healing will be delayed. Nonunion and pseudarthrosis may develop in prolonged infection.[4]

Delayed union is present when a fracture fails to consolidate in the usual time; the processes of bony repair are still operative but are retarded. The most frequent cause is inaccurate reduction, the second most common factor being inadequate or interrupted immobilization.[13]

Nonunion occurs when the reparative processes cease before firm union is produced. This is not the absence of healing per se but a failure of fibrocartilage to become bone. Radiographically, delayed union shows lack of bony trabeculation across and uniting the ends of the fracture, but the ends of the bone are not sclerotic or rounded at their edges, as they are in nonunion.

Pseudarthrosis, or the formation of false joints, occurs in nonunion of movable fragments of bone. The ends of the fracture may be connected by persistent fibrous tissue or by fibrocartilage and hyaline cartilage. Often the ends may become porous, atrophic and cone-shaped, and a thick bursal sac containing synovial fluid with loose bodies may form.[10] Fibrinoid degeneration usually precedes the scar formation and occurs if the fracture is extensive, is complicated by infection in the bone or is difficult to immobilize. Morphologically, fibrinoid is a mass of collagen and ground substance in all stages of degeneration. Fibrinoid imbibes water, and the internal pressure created by osmosis may break metallic appliances or refracture necrotic bone. If motion is not controlled, fibrinoid degeneration continues indefinitely.[2]

Pressure Phenomena

Key,[14] in 1932, described compression in arthrodesis of the knee for tuberculosis. According to Ford and Key[15], Charnley utilized positive pressure as an adjunct in arthrodesis of the knee, ankle, shoulder, hip and interphalangeal joints. He demonstrated early union and attributed it to the interlacing of the trabeculae in the cancellous bone of the apposing metaphyses; however, he was quick to point out that such positive pressure may not aid the union of cortical bone. Various investigators[15-17] have shown in animals that firm controlled fixation is the key factor and is superior to compression or extensile fixation. Great compression may even hinder healing and, if present intermittently or with shearing force, may produce nonunion.[16]

Systemic Factors, Drugs and Hormones

Calcification of fracture callus is accomplished by the same mechanisms as those in the development of bone. The transient temporary delay in calcification of the osteoid tissue at the height of development of callus is attributed to inability of the body to supply the increased needs of the rapidly metabolizing tissue at that point.[2]

A general reaction involving the entire body occurs when a fractured bone is healing.[18-21] Biphasic demineralization of the entire skeleton exists until mineralization is normal again at the fracture site. The formation of callus in refracture of the femur in humans appears more swiftly than it does in the original fracture, which suggests a general body reaction.[21] This body reaction is probably specific and is not a general stress reaction. In the rat, for example, loss of nitrogen usually ceases after the tenth day, whereas loss of calcium from the body continues for 30 to 40 days.[19]

Because the body holds the highest priority for bone-building material in transit, the feeding of large amounts of vitamin D, protein and minerals to patients who are not deficient in these substances does not influence healing.[1,2]

Since the problem of thrombophlebitis and anticoagulant therapy often appears in the postfracture period, Stinchfield and associates[22] studied the effects of bishydroxycoumarin (dicumarol) and heparin on the healing of fractures in dogs and rabbits. If such drugs were given preoperatively, or beginning 1 week after operation, a delay in bony union was noted; if they were given in the immediate postoperative period, fibrous union occurred. However, Stinchfield's group used large doses that were much greater than could be given to patients, so these observations may not be pertinent. If a patient needs anticoagulant therapy, it should be administered.

The effect of gonadal steroids on bone and their utilization at the fracture recently were summarized by Williamson.[23] The consensus at this moment is that there is little direct evidence of any benefit from the use of androgens or estrogens in treating fractures.

Corticotropin (ACTH), cortisone and cortisone-like drugs apparently inhibit the healing of fractures.[24-26]

Rosenberg[27] presented data on fractures occurring during treatment with cortisone, hydrocortisone, prednisone and ACTH in 48 patients who had rheumatoid arthritis. Fractures, most commonly of the vertebrae, developed in approximately 4 per cent of patients with rheumatoid arthritis who were treated with steroids. His conclusion was that any amount of steroid sufficient to induce regression of an inflammatory process may be enough to lay the groundwork for fracture. The average duration of treatment was 18 months before fracture occurred, and the healing process appeared normal. Attempts to prevent fracture by giving calcium, phosphorus, vitamin D and various reproductive hormones were either unsuccessful or of uncertain value.

Although evidence at present is scanty and controversial, growth hormone may have some beneficial effect on the fate of healing of fractures. Much further work must be done in this regard before any firm concepts can be accepted.[26]

Summary

Much of the basic information concerning the concepts of healing of fractured bones arose from pioneer work in the eighteenth century.

The healing of fractures pursues a well-established pattern, beginning with a hematoma at the fracture site, followed by aseptic inflammation, and organization in the hematoma. Granulation tissue and fibrous tissue appear and contain cartilage, which acts as a temporary bridging material. External collars of bone and internal callus close the gap in the fractured bone. This reparative callus and bone are remodeled continuously by resorption and reconstruction until repair is complete.

The time required for healing varies greatly depending on many factors. A general reaction involving the entire body is present when a fractured bone heals. Extra amounts of vitamin D, protein and minerals are not needed for the healing of bone unless the patient is deficient in such substances.

Firm, controlled fixation of the fracture site is the key principle in promoting union.

The administration of gonadal steroids does not seem to enhance the normal healing process and ACTH and corticosteroids may actually inhibit it.

Once a man's image, good or ill, is set in the public mind, he can contradict this legend every day and still be noted for his consistency.—*Gore Vidal*

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ANSWER TO WHAT'S YOUR DIAGNOSIS:

Skin lesions appeared progressed to the characteristic appearance of Herpes Zoster. The burning distress across the abdomen and the costo vertebral tenderness should have led to the suspicion of Herpes Zoster.

This is the story of surgical and drug complications following cataract extraction in a man, whose only diseases were bilateral cataracts and a peptic-ulcer diathesis. Long-term steroid therapy for postoperative sympathetic ophthalmitis produced severe peptic-ulcer complications, Addisonian collapse, postoperative evisceration and manic psychosis. Fourteen periods of hospitalization totaling 302 days and over 100 office calls occurred before a satisfactory result was finally reached. The estimated total cost was over $10,000, including $2,500 for drugs alone.

Complications of Suppressive Steroid Therapy

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The purpose of this report is to illustrate the difficulties encountered when physicians are obliged to continue use of adrenal steroids on a long-term basis. The natural tendency to become calloused to the hazards of certain frequently used medicaments needs to be counteracted by occasional re-emphasis of the details of these hazards.

Report of Case

This 64-year-old bachelor was first seen by one of us (C.W.W.) in January, 1951, complaining of poor vision in spite of new glasses prescribed a few months previously. He gave a history of ulcers in the right eye requiring 1 week of hospitalization in 1937. He had worked firing a furnace from 1935 to 1937, and blamed this for his ocular difficulties. He gave the additional history of one previous episode of a duodenal ulcer, treated medically in 1948. Examination showed a visual acuity with glasses of 20-50 in the right eye and 20-30 in the left eye; bilateral posterior cortical and subcapsular cataracts were present.

When he was next examined, in November, 1951, the vision had deteriorated to 20-300 in the right eye and 20-200 in the left. The cataracts had become increasingly dense and involved the lens nuclei, as well as the posterior cortices and capsules. A combined intracapsular *cataract extraction* on the right side was done in December, 1951. A month later, the corrected vision was 20-15. During hospitalization, the patient had a recurrent active duodenal ulcer, but this was easily controlled with medical treatment.

By October, 1952, the vision in the left eye had deteriorated to recognition of hand movements, and a *cataract extraction* on the left side was done. The lens capsule was ruptured during its delivery, and the lens was removed extracapsularly. In November, 1952, a small prolapse of the iris was noted at the 11 o'clock position. This increased in size despite cauterization with trichloracetic acid. Ten days later, the *prolapsed iris was excised surgically*. One month following this procedure, the eye became extremely irritable and examination revealed keratitic precipitates. There was no aqueous flare, but the vision was limited to counting fingers at a distance of 2 feet. Impaired vision was also present in the right eye, and the visual acuity was measured as 20-40. There were several keratitic precipitates, a moderate aqueous flare, and numerous cells moving in the aqueous current; the vitreous was hazy. A diagnosis of uveitis of the left eye and sympathetic ophthalmitis in the right eye was made. Peptic-ulcer symptoms were also present, and gastrointestinal x-rays showed an active duodenal ulcer.

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*From the Interstate Clinic, Red Wing, Minnesota. The authors wish to express their appreciation to the Veterans Hospital, Minneapolis, Minnesota, for providing summaries of their records in this case.

The patient was immediately hospitalized for ACTH and cortisone treatment. He was given 25 mg. of aqueous ACTH (in 1000 ml of fluid intravenously during 8 hours) and 100 mg. of cortisone acetate orally each day. The aqueous cleared in the right eye, and the vision improved remarkably. However, the left eye remained red, irritable and soft, with a 3+ flare and no useful vision. He was given a salt-free ulcer diet, aluminum hydroxide and methantheline bromide (Banthine) to prevent a flare-up of the peptic ulcer. He did well in the hospital and was dismissed on February 2, 1953. After hospitalization, the treatment consisted of cortisone acetate, 50 mg. daily, atropine eye drops, hot compresses, and the ulcer treatment outlined above.

In March, 1953, he discontinued taking cortisone when his supply was temporarily exhausted. Two days later he became nauseated; he vomited and felt extremely weak. He was admitted to the hospital with acute adrenal cortical insufficiency and was treated with cortisone acetate given intramuscularly. The cessation of steroid therapy caused the eyes to become irritable, with vision in the right eye reduced to 20-300, with aphakic correction. There were also numerous mutton-fat precipitates and a 3+ flare in each eye. The left eye showed neovascularization, a dense pupillary membrane, and a moderate elevation of tension, with vision limited to light perception. Response to treatment was again dramatic, and he was dismissed in good condition 10 days after admission.

During the next year, the patient was hospitalized four times at the Veterans Hospital for a total of 151 days. In November, 1953, absolute glaucoma developed in the left eye and *peripheral iridectomy and sclerotomy* were performed. Vision in the right eye remained good, the steroid controlling the sympathetic ophthalmitis adequately.

In April, 1954, acute gastritis with questionable x-ray evidence of a duodenal ulcer crater appeared. Nausea and vomiting prevented steroid medication for 2 days before he sought help, and moderate adrenal cortical insufficiency was again evident. After 24 days of intensive treatment with ACTH and a medical ulcer regimen, he was again dismissed in good condition. At this time, moderate Cushing's syndrome was observed, with acne, moon facies and a trace of glycosuria.

In March, 1955, an attempt was made to reduce the maintenance dose of cortisone acetate to 25 mg. daily; he did not return for 2 weeks. In this interval, the sympathetic ophthalmitis flared up and vision in the right eye was reduced to 20-40. The steroid therapy was changed to prednisone, 20 mg. daily, and again the uveitis was excellently controlled.

In December, 1955, the tension in the right eye was found to be increased and acetazolamide (Diamox), 250 mg. four times a day, was prescribed.

In February, 1956, the patient returned to the Veterans Hospital, and enucleation of the left eye was planned. Gradual withdrawal of steroid therapy again produced adrenal cortical insufficiency, with severe general weakness, nausea and vomiting. Consideration of enucleation was abandoned, and maintenance steroid therapy was increased to 40 mg. of prednisone daily.

For the next 11 months he was maintained on an ambulatory basis in spite of several recurrences of ulcer distress. Several upper gastrointestinal x-ray examinations were made, but a crater could not be visualized. He returned to the Veterans Hospital for 3 weeks in April, 1957, for evaluation, but the program of treatment was not altered.

In December, 1957, the patient was again hospitalized because of recurrent abdominal pain, nausea and vomiting, and mild adrenal cortical insufficiency. Melena occurred and a prepyloric gastic ulcer was observed radiologically. Intensive medical treatment gave only partial control of the ulcer symptoms. He was dismissed after 22 days, at which time he was taking a strict ulcer diet, aluminum hydroxide, propantheline bromide (15 mg. four times a day); promazine hydrochloride (Sparine, 10 mg. four times a day); multiple vitamins, prednisone (10 mg. daily), acetazolamide (750 mg. daily) and pilocarpine eye drops. At the time of dismissal he was continuing to have ulcer distress and occasionally vomited. He did not get along well in spite of all of this treatment; and therefore, he was advised that it would be necessary either to do a gastric resection or to discontinue steroid medication and allow the sympathetic ophthalmitis to produce total and permanent blindness. He decided that surgical intervention was preferable to blindness.

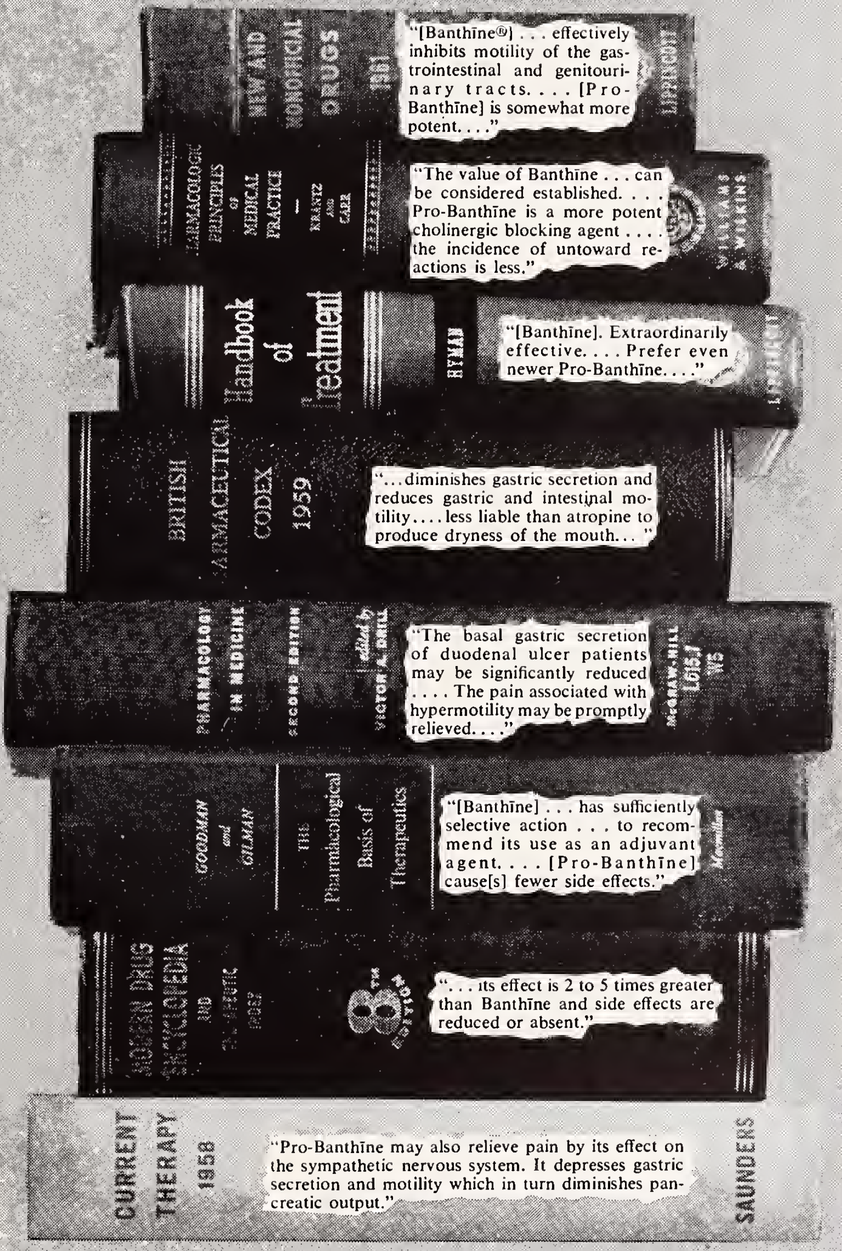
A *subtotal gastrectomy* with a Hofmeister anterior repair and vagotomy was performed on January 20, 1958. Hydrocortisone was given intramuscularly before, during and after operation, and the operative and immediate postoperative condition was good. Two days postoperatively, spontaneous pulmonary atelectasis and secondary pneumonia developed, and he became cyanotic and comatose. On intensive care, the patient gradually improved; 3 days later, he was able to discontinue use of oxygen. However, on January 29, complete evisceration of the abdominal wound occurred and he was returned to the operating room. He had been maintained with parenteral use of cortisone, but additional cortisone was not given during the operation for the evisceration, and an acute Addisonian crisis with collapse developed about 4 hours postoperatively. The intravenous injection of hydrocortisone produced a dramatic reversal of the crisis, and he was in good condition on the following morning. On February 6, an acute maniacal psychosis developed and was extremely difficult to control. The dose of cortisone was not excessive but no doubt the drug was a partial contributory factor. By February 15, his psychosis was improved; and by February 26, he was oriented again and was able to be ambulatory.

He was dismissed on March 1, 1958, at which time he was taking triamcinolone, 8 mg. daily, and pilocarpine eye drops. In December, 1958, the steroid was changed to dexamethasone (Decadron), 0.75 mg. daily. His vision remained at 20-40 in the right eye, and he had no other complications. In January, 1961, the oral use of steroids was stopped, and he was given ACTH gel (80 units) intramuscularly twice a week for 2 weeks to stimulate the adrenal cortex. No medication was given thereafter except isocarbachol eye drops. Eighteen days after the last dose of ACTH gel, examination showed recurrence of the uveitis in the right eye, with a faint aqueous flare and numerous keratitic precipitates. Dexamethasone eye drops (0.1 per cent) adequately controlled the process.

He has continued to remain well at this writing (March, 1961), and his ocular disease is completely controlled with the use of dexamethasone (0.1 per cent) and isocarbachol (1.5 per cent) eye drops, four times a day; his vision varies between 20-30 and 20-40 in the right eye. The vision in the left eye is limited to light perception.

Summary

This case dramatically illustrates two well-known facts; namely that steroid therapy blocks sympathetic ophthalmitis and preserves vision but that long-term steroid therapy has many hazards, particularly in patients with an ulcer diathesis and an unstable psyche.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Editorials

THE RHEUMATOID HAND

Disabling joint deformities are a major problem in the patient with rheumatoid arthritis. Only in the last few years is this phase of the care of the rheumatoid patient beginning to get the attention it deserves. No longer fettered by the fear of operating in the presence of active joint disease, the orthopedist is taking his rightful role alongside the rheumatologist and physiatrist in managing these difficult but challenging cases. The combined effort of these three specialists is often enough inadequate, yet should these deserving patients get less?

The contribution in this issue by Drs. Linscheid and Lipscomb is an example of progress in a previously neglected area—the deformed rheumatoid hand. In the hand the disease process often extends beyond the joint synovium and capsule into the tendons and their sheaths. Therefore, to the normally intricate anatomic complexities of the hand is added extensive soft tissue damage in addition to the joint and bone damage. Small wonder that progress has been slow, but it is heartening to see the change.

Paul J. Bilka, M.D.
Minneapolis, Minn.

DELINQUENCY PRONE PERSONALITIES

III. The Sociopathic Personality: Treatment.

The first two installments of this series appeared Vol. 43, Nos. 10 and 11 (Oct., Nov., 1960). — The Editors

The discussion given in the last article concerning the characteristics and development of the sociopath indicated that these individuals are very difficult to treat. Their character structure is such that they do not respond to usual rewards and punishment in such a way as to profit from experience. They are impatient and seek immediate gratification of every mometary whim. They cannot plan ahead.

Wirt and Briggs have argued elsewhere (7) that it would be economically sound and socially more effective to carry out case finding projects early and to attempt group work, case work with families, and other social, legal, educational, or psychological intervention before full personality development and severe delinquency occur. Wirt and Jacobson (8) have shown that group psychotherapy with adult offenders reduces the amount of difficulty inmates have in prison and appears to increase the prognosis for their satisfactory parole adjustment. Others have made similar suggestions, especially the pioneers in this field, Sheldon and Eleanor Glueck (2,3,4).

First we should point out that time seems to make a difference. Older sociopaths are sometimes described as "burned out psychopaths," suggesting that with advancing years the eager enthusiasm for wild adventure is lessened and the individual is able to live in society peacefully, albeit marginally. The milder youthful case also responds to developmental changes. We have found a marked decline in delinquency rates for

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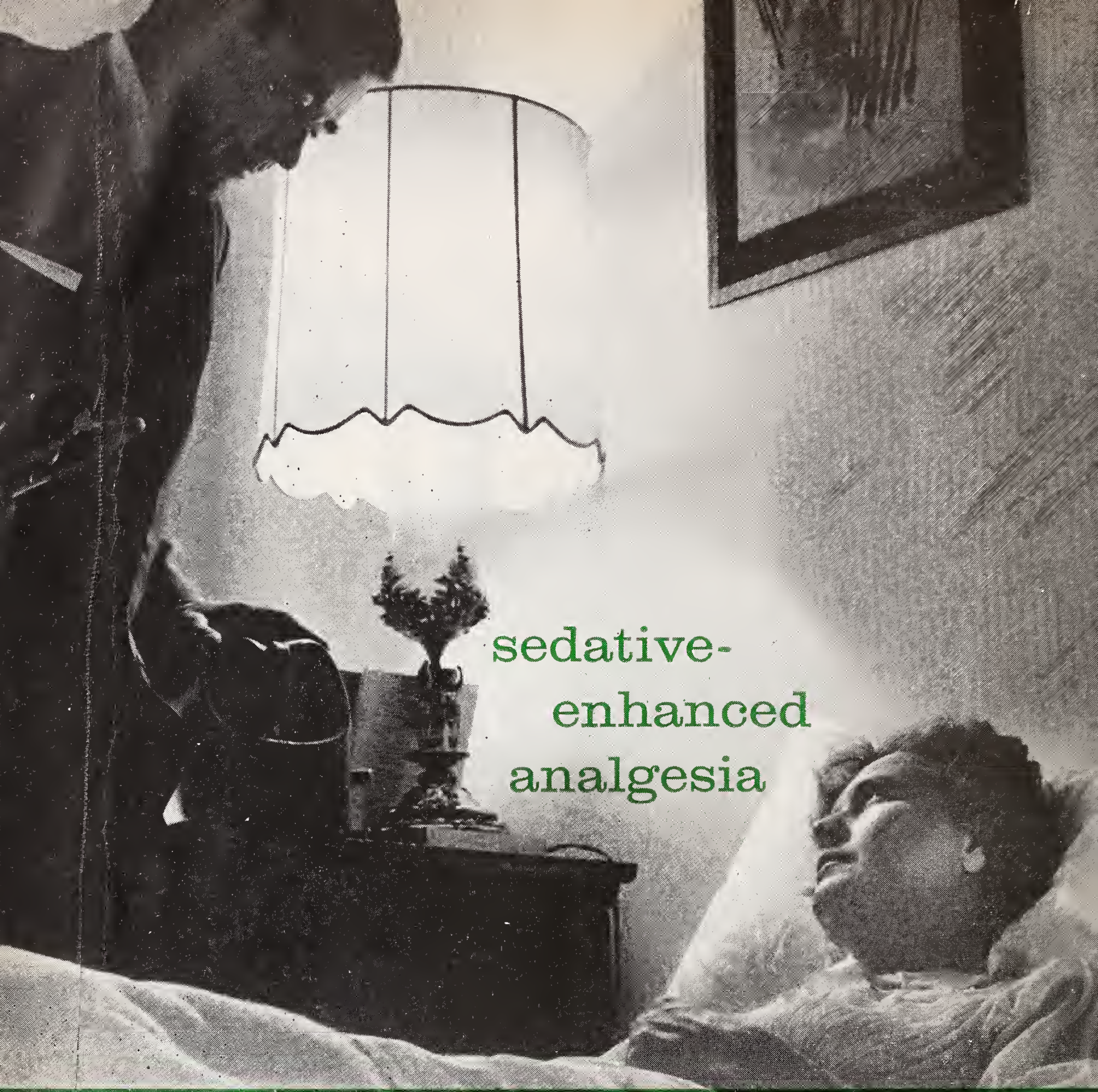

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older adolescents and young adults in comparison with the crime rate for the middle adolescent years. This suggests that for many youthful offenders the currently popular plan of strict probation with close supervision is desirable, since with further development most such young men attain sufficient self discipline to avoid tangles with the law.

Diagnostically it has been asserted by some that the sociopath suffers from an underdeveloped conscience. Treatment, with this in mind, is directed toward the establishment of the missing inner controls by using psychiatric techniques. This may include efforts to establish a strong identification with the therapist who is thereby in a position to impart cultural standards. Lindner (5) recommended using hypotherapy to facilitate implanting of desirable attitudes. Others have tried restrictive methods designed to raise the sociopath's anxiety level to nearly intolerable limits. The sociopath is generally regarded as possessing very limited capacity to feel anxiety. Lykken (6), for example, found that they differed greatly from normal persons in their physiological reaction to impending pain. While normals show the usual physical concomitants of apprehension, the sociopaths did not respond with anxiety until they actually received the painful stimulus—and then their response was at a reduced level. Such findings are cited to explain the sociopath's inability to profit from punishment or to be adaptive when faced with possible frustration, since they do not perceive future threat. This may be why some of the most daring, and even heroic, life endangering feats are credited to some sociopaths. They simply do not worry about possible harmful consequences. To employ methods which raise their feeble anxiety level requires the use of a closed institution in which the sociopaths mingle closely with each other and after the early affinity and interest wears thin, hopefully begin to "get on each others nerves." Frustrations are introduced. This is easy, since the typical sociopath has poor tolerance and is impatient. First comes anger, then anxiety. The therapist must then be ready to step in; he is understanding, helpful; he does all he can to foster dependency and trust, he uses suggestion and interpretation. All of this "brain washing" technique may result in a docile, well-manner, no longer anti-social and no long anxious person: a prematurely burned out sociopath. Our clinical evidence is that these strenuous, and perhaps questionable, methods are of transitory value. While within the structured and dependent situation the sociopath conforms, but upon return to the world away from continuous support and supervision, there is a return to sociopathic patterns. Because severe cases have such a poor prognosis, Cleckley (1) believes such sociopaths should be institutionalized for indefinite periods.

We believe that a more direct approach to the problem of antisocial behavior is to accept the sociopath's need for varied activity, to recognize his superficial emotions, his easy boredom, his recklessness and dissolute tastes, but also recognize that he often does not achieve his own stated ends. The tragedy of sociopathy for the individual himself is that his own wild abandon destroys the very immoral ends he seeks. In the process he may badly damage untold innocent others as well as produce considerable damage to property. The thing he *may* be able to learn is not to be good but to be less self-destructive, the by-product of which is to be less destructive of others. We would employ his very selfishness as a chief means for self-control. Group psychotherapy and other group methods sometimes are effective in this effort. Here, with other sociopaths, the individual is exposed to self conscious interpretation of caricatures and reflections of his own ideas and behavior. He needs activities, he needs ways of expressing enormous energy, he needs to underachieve and to gain indulgent pleasure. We would provide the sociopath with recreational opportunities which are exciting but not dangerous to others such as racing on drag strips instead of the public highways. We would provide vocational goals which involve substantial activity and social interchange, but do not require much responsibility. We would encourage his joining lively social organizations, but we should not want him to be burdened with their direction. Knowing that time helps, we should expect the sociopath to be able to assume more mature roles much later in life than most adults. While we are advocating a tolerant compromise with the sociopath's immaturity, we do not wish to imply toleration for delinquency. The sociopath must be held to account for his action and we should not be fooled by his glib promise to do better next time. For the protection of others, he may need firm limits and strict supervision (in-

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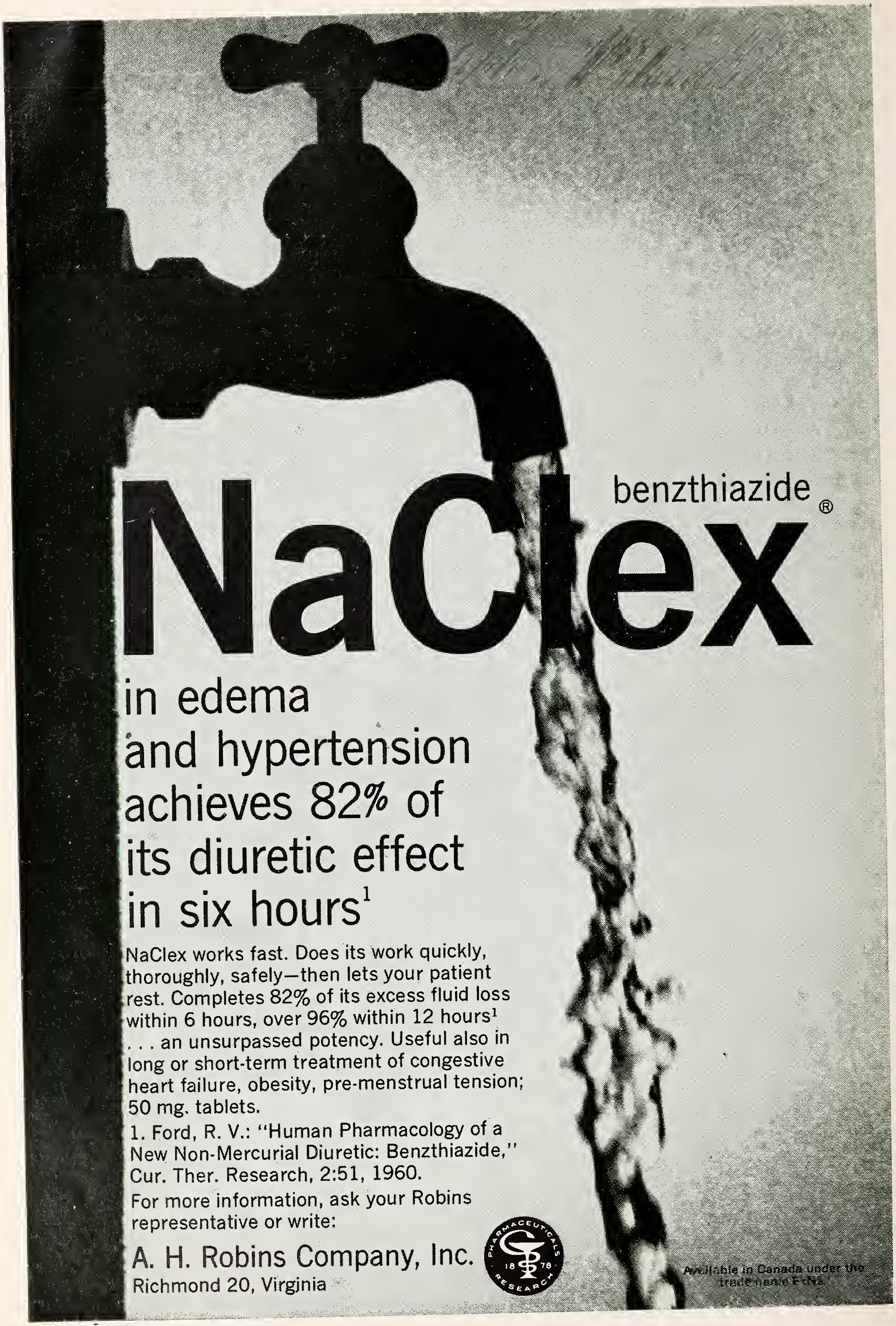

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Finally, the reader is reminded that we have discussed here the sociopath, who represents only one form of the delinquency prone personality. Other treatments are needed for other personalities.

IV. Non-sociopathic Psychiatric Syndromes

The last two articles described something of the diagnostic characteristics and treatment efforts employed for the sociopathic personality. It is the sociopath who contributes the major share of delinquent acts. But a variety of other psychiatric and neurological conditions may be associated with delinquency.

Among these are cases of schizophrenic and other psychotic conditions, neurologic, low intellect, and neurotic disorders which partially manifest themselves in delinquent patterns. For these cases, the physician and the psychologist may very well make a helpful contribution to the court's deliberations.

The person who is psychotic has lost contact with reality. Either because of grossly disordered thinking process or severely disturbed mood or emotional state, he does not evaluate or react to the persons and objects in his environment nor to his own ideation in a way which is consistently rational or adaptive. Such persons sometimes commit crimes because of illogical thinking, as for example, the paranoid patient who strikes out because he believes an innocent stranger to be his malevolent persecutor. The manic patient with his extreme agitation, grandiose delusions, and euphoric mood may make a disorderly and public spectacle of himself. Actually few psychotics are delinquent, but when they are their disposition requires consideration of their psychological state. They are in need of psychiatric treatment whatever may be the legal state of affairs.

A fair number of adolescent delinquents are descriptively schizoid, as distinct from schizophrenic. While these persons do not have grossly disordered thinking processes, are not uncommunicatively withdrawn, and do not manifest inappropriate emotional reactions, they are distant from others, somewhat eccentric in their thoughts, and have rather flattened and unresponsive emotional lives. There are the peripheral members of delinquent groups, who go along for the ride. Because they have such difficulty in establishing close interpersonal relations, they may take up with the sociopath whose superficiality does not require much personal investment and who may use the schizoid boy for exploitation. Or they may alone perform some delinquent act as a miscalculated expression of defiance or bid for attention.

The treatment for the schizoid delinquent is made difficult because of their problems in communication. They need help in learning to come to feel comfortable with others and to recognize and utilize their own affective reactions. They need opportunity to gain pride and self-confidence from their own introverted activities, for otherwise they tend to drift into unproductive daydreaming. Our society puts so much stress on the value of social interaction and extroverted activities; the more isolated and withdrawn among us sometimes must feel inferior for being different.

Some forms of cerebral pathology result in lowered inhibitory control. These neurological conditions may be the result of trauma, such as birth injury or later accidents of childhood, or of infection or of toxins. These individuals are hyper-active, impulsive, and emotionally unstable. In their excitability they sometimes have behavioral explosions which may cause damage. Some of them do not possess sufficient control to inhibit action upon being stimulated. Thus they may grab an attractive object, not because of a tendency toward malicious stealing but because they could not resist momentary desire. These persons may experience very great guilt following an outburst or other delinquent act. Since their behavior is frequently similar in superficial appearance to that of the impulsive sociopath, it is important in these cases to have adequate neurological study. They may need medication and often need a more controlled, less stimulating environment than the normal child requires.

Some persons of low intellect become engaged in delinquency because they quite simply do not know any better. Others are gullible and respond to the insidious suggestions of brighter and unprincipled sociopaths who dominate and exploit them. Mental retardation, especially in the borderline and moron ranges, is not at all always obvious from clinical observation. These individuals are best diagnosed by a carefully adminis-

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tered individual test of general intelligence. When a defective delinquent is found, it is important to help him find an environmental situation in which he is protected from responsibilities that are beyond his capacity and protects him from the company of those who might use his lack of critical reasoning to accomplish their own asocial goals and which protects him from any members of his family who are not themselves competent.

There are a few varieties of the psychoneuroses which may become associated with delinquency. The most often cited is the compulsive neurotic. There is such a thing as compulsive stealing and it can be distinguished from impulsive stealing. The compulsive person who is a shop lifter, for example, is likely to take objects for which he (but more often she) cannot and does not use. These objects may be hoarded away in miserly fashion. These people often have severely anxious internal battles and they experience profound feelings of shame and guilt. Other compulsives fixate on ritualistic eating, compelled drinking, pyromania, and various sexual aberations, especially fetishes and exhibitionism. While none of these is common, they all may be neurotic, and some are delinquent acts, a few of which are of considerable danger to others. These are difficult patients to treat, but the only effective treatment appears to be intensive psychotherapy, which may be long and expensive. Many compulsives seek psychiatric treatment for themselves, but some fear consulting a psychiatrist because of the humiliation they feel regarding their symptoms. Those who break the law are frequently relieved to be apprehended by the police.

Other severe neuroses which may result in delinquency include some phobias in which the individual's extreme fear prevents him from carrying out some assignment, such as in school phobias where the child may become adjudicated a delinquent truant. Some neurotic anxiety reactions result in criminal acts incidental to the panic from which the person is suffering.

Finally, there are rare, exotic neuroses of a basically hysterical reaction in which during states of dissociation the person commits crimes for which he is amnesic.

All of these disorders are basically medical and psychological problems, as distinct from the sociopathic offender who is chiefly a social and legal problem. The cases discussed in this article should receive proper attention for their psychological and neurological disorders.

Robert D. Wirt, Ph.D.
Peter F. Briggs, Ph.D.
Jules Golden, M.D.
Center for Personality Research
University of Minnesota

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Letters to the Editor

To the Editor:

In your Editorial of the January issue entitled, "Must History be Repeated," you state that the starting salary for full time hospital work in the British National Health Service is $1,306.00. I beg to correct you. It is $1,890, at the rate of exchange of 2.80 dollars to the pound.

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The Editors

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Abstracts and Briefs

VITAMIN B6 ANEMIA

An unusual type of anemia is described, characterized by the findings of hypochromic, microcytic, red cell indices; elevated serum iron; hemosiderosis; and partial or complete responsiveness to large doses of pyridoxine. The term "pyridoxine-responsive anemia" is used, since there is no evidence of pyridoxine deficiency, dosages far in excess of normal requirements are needed, and relapse occurs when pyridoxine therapy is stopped, even though a normal diet is maintained.

An inborn error in metabolism as the basis for this disorder is suggested by its occurrence in children, beginning in infancy in some cases, and by a distinct abnormality in tryptophan metabolism demonstrated in several cases so studied. In experimental animals, diets deficient in pyridoxine have produced an identical syndrome, responding to replacement therapy.

Since pyridoxine functions as a co-enzyme in many different enzyme systems, a relative or absolute deficiency may be expressed in different ways. As examples, infants maintained on a formula deficient in pyridoxine have developed convulsions but not anemia; patients receiving INH, a pyridoxine-antagonist, may develop a peripheral neuritis. In pyridoxine-responsive anemia, the relative pyridoxine deficiency is expressed as a defect in the formation of delta-amino levulinic acid, an essential porphyrin precursor.

Although this condition is rare, its early recognition is important, since response to treatment has been good to excellent.

F. B. Tiffany, M. D.
St. Paul, Minn.

"Pyridoxine-responsive Anemia" Raab, S. O., Haut, G., Cartwright, E., Wintrobe, M. M.; Blood: 18:285, Sept., 1961.

TREATMENT OF PARKINSONISM

Biperiden (Akineton), similar in structure to trihexyphenidyl (Artane) and procyclidine (Kemadrin), was found to lessen the tremor and rigidity of half, and to improve the general performance of two-thirds of the patients in a double-blind study. The dose was 8 to 25 mgm. per day. The side effects were not common and included dryness of the mouth, blurring of vision, malaise, nausea and vomiting, drowsiness and confusion; all were reversible promptly on reduction in the dose. Biperiden mixes well with antihistamines and ethopopazine and mepazine (two phenothiazines effective in tremor).

R. G. Siekert
Rochester, Minn.

"Biperiden (Akineton) in Parkinsonism" Timberlake, W. H., Schwab, R. S., and England, A. C. Jr.; AMA Arch. Neurol. 5:560, Nov., 1961.

TREATMENT OF OVARIAN DYSGERMINOMA

Because of its relative rarity little experience has been gained in the management of ovarian dysgerminoma. The authors believe that aggressive radiation therapy gives this type of ovarian tumor a better prognosis than the more common types of ovarian neoplasm. After reviewing the results and recommendations obtained from other summaries in the literature the current paper compiles data from 27 cases of ovarian dysgerminoma seen at the Mayo Clinic during the years 1912 through 1959. Forty-eight percent occurred in women 20 years of age and younger; 85% within the first three decades. Only two of the patients had bilateral tumors. The oldest patient, aged 54, was a male pseudohermaphrodite. Three patients had the dysgerminoma simultaneously with pregnancy. The most common symptoms were abdominal pain (45%) and abdominal mass or swelling (33%). Two patients had acute abdominal symptoms as a result of torsion of the tumor mass.

Seven patients had extraovarian extension at the time of surgery. The most frequent route of metastasis was lymphatic, although hematogenous spread occurs late in some instances. Peritoneal implantation is rare.

The initial surgical therapy consisted of biopsy only in one patient, unilateral salpingo-oophorectomy in 15 instances, and bilateral salpingo-oophorectomy in 11 patients. The uterus was also removed in nine patients. Subsequent operative procedures were performed in 10 patients with variable technics and dosages through the years.

Several patients in the series had remarkable cures from radiation therapy in spite of known inoperable metastasis or recurrence, and this has been noted by several other authors.

The conclusions are: 1) Ovarian dysgerminoma is a neoplasm with considerable malignant potential 2) Recurrence rates in initially favorable situations are relatively high 3) The recommended treatment is bilateral salpingo-oophorectomy and total hysterectomy, with routine post-operative radiation to the pelvis and abdomen.

The reason for reviewing this article is to emphasize the conclusions regarding treatment. Apparently, dysgerminoma, which has been likened to seminoma, also has good responsiveness to radiation therapy. Therefore, such therapy is definitely indicated.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"A Study of Ovarian Dysgerminoma with Emphasis on the Role of Radiation Therapy" Thoeny, R. H., Dockerty, M. B., Hunt, A. B., and Childs, D. S.; S. G. & O. 113:692, December, 1961.

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INGUINAL HERNIA IN CHILDREN

The purpose of the present review was to attempt to determine what policy should be adopted in regard to the contralateral side in children with an obvious unilateral inguinal hernia. One thousand consecutive cases of inguinal hernia from the records of the Department of Surgery, Children's Hospital, and University of Louisville School of Medicine during a five year period were reviewed.

Only one hundred and eight patients presented with a complaint of bilateral inguinal hernia, but one hundred and thirty-six were found to have bilateral hernia on initial examination. In the entire group, however, three hundred and thirty-four patients underwent bilateral herniorrhaphy. It is impossible to determine how often the decision to explore the contralateral side was based on actual physical findings, and how often it was simply due to an awareness that a contralateral hernia might possibly be present.

Ninety-five per cent of patients who had bilateral exploration, had a hernia on the second side. Forty-seven children returned after unilateral repair, because a hernia subsequently appeared on the second side.

The authors conclude that boys less than thirty months of age should have a bilateral procedure if circumstances permit. Several prominent pediatric surgeons, in discussing the paper, quoted extensive experience to justify a policy of bilateral exploration in children of all age groups. Others felt that such a policy results in too many unnecessary explorations, too often by inadequately trained surgeons.

Though the complete answer applicable to all patients has not been given, it remains apparent, that in competent hands, under favorable circumstances, bilateral exploration is a worthwhile procedure for the small child with an obvious unilateral hernia. It should be unnecessary to add, however, that we must treat the individual patient rather than the series, and operate by principles rather than rules.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"Inguinal Herniorrhaphy in Children" Lynn, H. B., and Johnson, W. W., Arch. of Surg., 83:573, October, 1961

BLOOD PRESSURE MEASUREMENT IN THE OBESE ARM

A case was presented showing the error in the sphygmomanometer reading caused by the obese arm.

The pretreatment blood pressure reading was 200/140mm Hg. After intensive treatment with ganglionic blocking agents had given complete clinical relief, the blood pressure was read as 200/130mm Hg.

A fairly detailed experiment was set up to measure exactly the pressure through a needle in the radial artery and the reading on the sphygmomanometer simultaneously. The *cuff* pressure was 194/130mm Hg. while the *true* pressure was 170/100mm Hg.

This pointed up the need for a wide, fairly rigid, tightly applied pressure bag on the thick arms. It is known that with a narrow cuff the pressure is dissipated in compressing the obese tissue.

Attention to this detail may prevent an overdose of antihypertensive drugs.

R. B. Potter
Minneapolis, Minn.

"Blood Pressure Measurement in the Obese Arm" Rose, J. C., GP 24:90, Oct. 1961.

WRINGER INJURIES

The authors are concerned that the medical profession often fails to appreciate the seriousness of wringer injuries of the upper extremity. The data forming the basis for their discussion are derived from the review of 444 patients with wringer injuries of the upper extremity treated at Cincinnati General Hospital during the past 20 years. The literature containing other reviews is summarized with emphasis on the principles of management derived from these studies.

Eighty-two of the series of 444 patients required hospitalization. The others were treated as ambulatory out-patients. Sixty-five percent of them were children under the age of ten. Thirteen patients had fractures. Ninety-eight patients had lacerations that required immediate suturing, most of them being in the digits. Other sites were proportionately less frequently involved progressing proximally to the axilla.

X-rays of the extremity were taken routinely. The extremity was thoroughly cleansed with soap and water for ten minutes. Lacerations were sutured unless contraindications to primary closure were found. Uniform compression dressings were applied and the extremity splinted and elevated. Prophylactic tetanus therapy was given to all patients. Antibiotics were used only where specific indications existed.

Adequate follow-up was possible for 304 patients. One patient required fasciotomy for a massive effusion, and subsequently developed a Volkmann's contracture of the hand. Five patients required aspiration of a hematoma and two had incisional evacuation of hematomas. Finger amputation was necessary for one individual who had a complete circular laceration of the base of the finger resulting in devitalization. Sixty-three patients had small areas of skin slough that healed without grafting. Forty-one required skin grafts. There was residual impairment of motion in twenty-one extremities. The authors concluded that a good result was obtained in 94% of the patients they were able to follow.

The principles to be followed in management of wringer injuries may be summarized as follows: 1) proper occlusive compression dressings; 2) protection from further contamination and trauma; 3) mechanical cleansing of wounds; 4) thorough removal of devitalized tissue; 5) repair of injured deep structures, including reduction of fractures; 6) closure of wounds; 7) maintenance of position of function.

The type and degree of trauma from wringer injury may be misleading to casual or superficial inspection. Many young extremities may be restored to near normal appearance and function by meticulous care and attention to the principles outlined above. Awareness of the potential sequelae of improper management will require that the emergency room physician proceed with respectful diligence when treating wringer injuries.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Wringer Injuries of the Upper Extremity" Iritani, R. I. and Siler, V. E., S. G. & O. 113:677, December, 1961.

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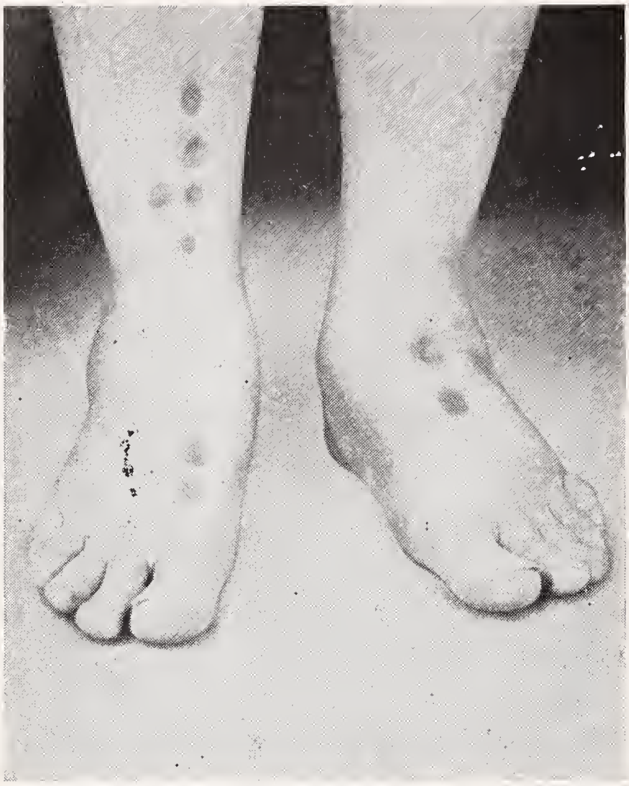

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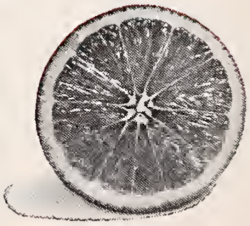


Book Reviews

PORTAGE INTO THE PAST—J. Arnold Bolz, M.D. University of Minnesota Press 1960. Drawings by Francis Lee Jaques. $4.50

Dr. Bolz, who practices medicine in Grand Rapids, Minnesota has produced a very talented and artistic description of the exciting period of the French-Canadian voyagers engaged in the fur trading industry along our great wilderness border from Grand Portage to the Rainy Lake. For those who are not aware of the great water highway established by these adventuresome people, beginning as early as the late 1600's, they will find that "Portage Into the Past" carries the same continuous, sustained reader interest as the historical novels of Harold Lamb. This book, however, is completely factual.

The structural plan of this book contained, first, a short prologue involving introductory history of the area. With this background Dr. Bolz describes a personal trip over part of the identical area. The adventures and daily experiences of his party set the stage upon which evening campfire readings from the numerous diaries of the Northwest and the Hudson's Bay Company created thrilling reader interest. Many characters are developed and the tales of their great adventures bring to life these sturdy men, the voyagers of two hundred and more years past. For anyone, and most particularly those who have traveled by canoe in our roadless area of the Canadian border, this book "Portage Into the Past" will be very difficult to lay aside before completion.

This book is a literary achievement which all physicians may pridefully refer to as an achievement of their colleague, Dr. Bolz.

Carl O. Rice, M.D.
Minneapolis, Minnesota

PROBLEMS IN SURGERY. Frank Glynn, M. D., and George E. Wantz, Jr., M. D. C. V. Mosby Co. St. Louis—1961. Price—$16.50

This book represents a compilation of Grand Rounds at the Cornell Medical Center.

One hundred fifty-two case records are briefly detailed and discussed by staff members from all of the specialty departments. The case histories are succinctly described. The discussion of the case history is then carried on by three or four staff members and the final outcome of the case is clearly stated at the end of each case history.

These case histories are interesting and involve common problems as well as unusual problems.

The chapters are arranged in relation to various anatomical problems — pulmonary, cardiac, vascular, alimentary, biliary, urologic, endocrine, orthopedic, and miscellaneous. The case histories are instructive and could be used by any physician who encounters problems in these fields. It is not completely comprehensive but the field is sufficiently well covered so that any physician could gain a great deal of knowledge by reading these case histories.

Carl O. Rice, M.D.
Minneapolis, Minnesota

PATHOLOGY—W. A. D. Anderson, M. D.—C. V. Mosby Company, St. Louis. 1389 pages. $18.00.

This is the fourth edition of Pathology. This edition allows the physician the opportunity to continue his studies in pathology during and after formal courses and in correlation with other aspects of the clinical practice of medicine.

It is beautifully illustrated with micro photographs and photographs of gross lesions. Bibliographic references are appended at the end of each chapter.

The book is well written and can be recommended to the pathologist as an additional reference, to the surgeon, internist, and general practitioner who is desirous of refreshing his pathology in the numerous diseases which he encounters.

Carl O. Rice, M.D.
Minneapolis, Minnesota

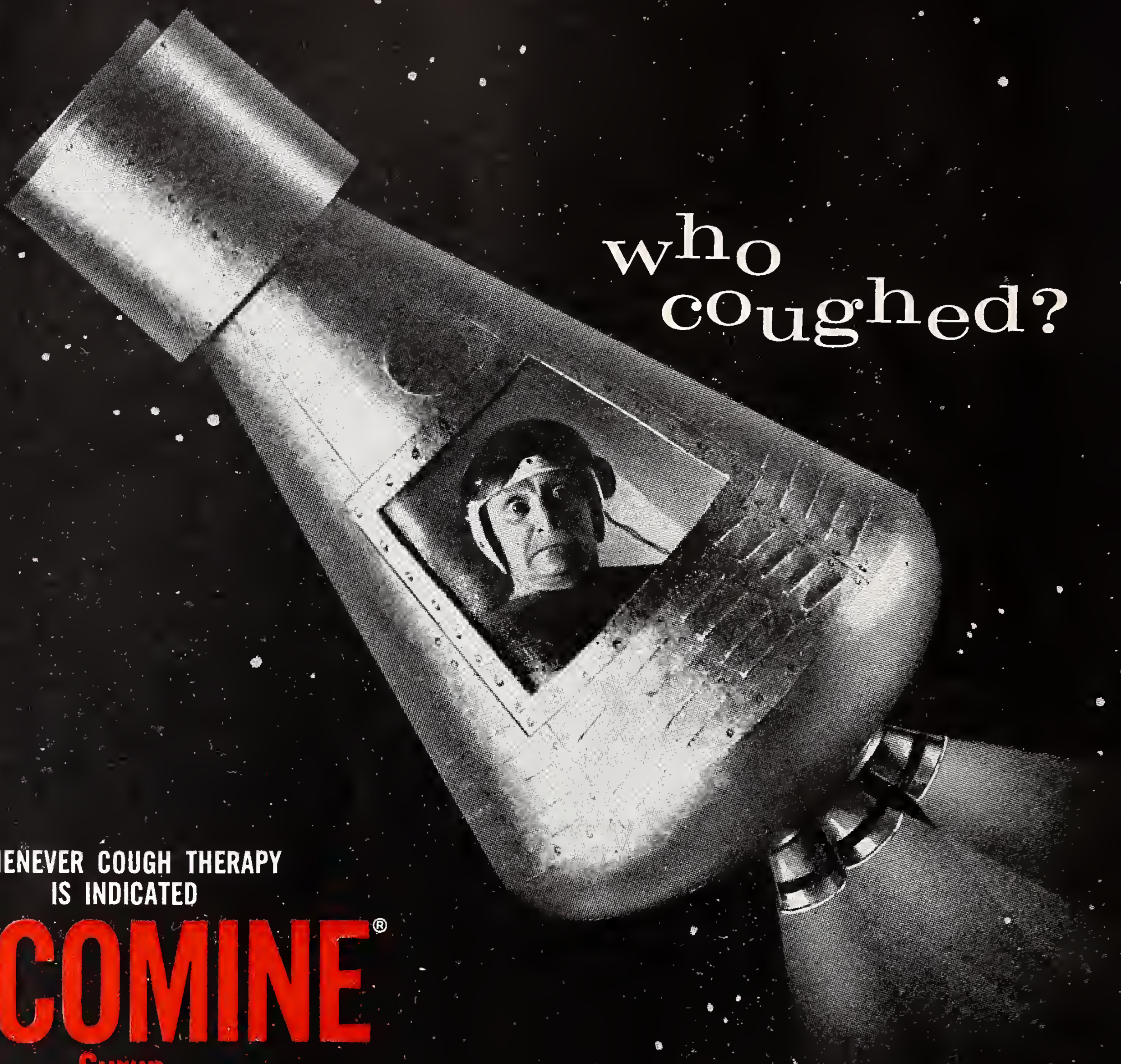
EYE SYMPTOMS IN BRAIN TUMORS. By Alfred Huber, M.D. Translated by Stefan Van Wien, M.D. St. Louis, C. V. Mosby Company, 1961. 329 pages, 192 figures (drawings and photographs), 5 tables, complete chapter references, summary, index. Price $16.00.

This important volume, smoothly translated by an American ophthalmologist, gives us the actual analysis of 1,600 cases of brain tumor from the University of Zurich Neurosurgical Clinic by Dr. Huber, an ophthalmologist and neurologist. Major emphasis is on ocular signs, which exist in over 50 percent of the cases. Patients often first consult eye specialists, who are becoming increasingly aware of neuro-ophthalmological diagnosis. Personal experience is contrasted to entrenched notions.

Simple methods of examination, often neglected now for more hazardous contrast studies, are described in the first chapter. The complex subject of pupillary reactions is clarified. Nystagmus is explained. The use of frequent crude visual field tests over frequent elaborate studies is recommended. Brain tumor patients often cannot cooperate well. Symptoms are annoyingly vague. For example a patient may "fill in" a hemianopia and complain of poor lighting at work instead. General signs are covered in Chapter II, including an excellent differential diagnosis of papilledema, the most important of these. A systematic topographical description of brain tumors makes up Chapter III. The inadvisability of making the diagnosis of "retrobulbar neuritis" without a searching evaluation of the chiasmal area is stressed by unfortunate case histories. Whereas ocular symptoms are lacking in frontal lobe tumors, they are decisive for mid-brain growths for example. In completion, the author discusses the occurrence and behavior of the common histological types of brain tumors and includes "pseudotumors" such as hematomas and aneurysms.

This book is very readable, beautifully illustrated and highly recommended to medical students, physicians and specialists.

William S. McClanahan, M.D.
Chinon, France



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Special Articles

The Clinic Pharmacy

ROBERT B. BENJAMIN, M.D.[*]
Minneapolis, Minn.

The function of a clinic is improved, according to the author, when pharmaceuticals are dispensed through the clinic pharmacy. The author presents a strong plea for the expansion of this concept.

In view of the social pressures on the healing professions to stabilize medical costs, it is the physician's responsibility to practice medicine in the most effective and efficient manner possible. To do so requires continuous change in traditional methods, if we are to preserve the private practice of medicine.

The clinic pharmacy has become as necessary to the practice of medicine as the clinic laboratory, the X-ray department, or other departments of a modern medical clinic. The clinic pharmacy, if well run, can increase immeasurably the scope and quality of medical care. This can result because the clinic pharmacy is under the supervision of physicians who, in association with the pharmacist, can exercise control over the quality of drugs dispensed by the clinic pharmacist. One need only read the daily newspaper to realize how widespread is the dispensing of counterfeit drugs or drugs of poor quality.

It has been said, rashly to be sure, that patients are not interested in a reduction of drug prices.[1] However, thirteen unions in New York City recently decided to organize a chain of drug stores on the premise that it would be possible to reduce drug prices by 30 percent.[2] Contrary to the expression of Pharmacist Moen,[1] it is evident that people are intensely desirous of obtaining a moderate reduction in the price of drugs.

The close control over the formulary of the clinic pharmacy makes it possible to effect a saving for the patient. This can be done only when the pharmacy has the cooperation and interest of a large group of doctors. For example, with formulary control, the purchase of only one generic drug is necessary. For example, only one brand of tetracycline need be stocked, rather than all of the many new brands on the market. This saving can, therefore, be passed on to the patient.

One need make no excuse for the substantial profit that a clinic pharmacy will make, even though it is able to sell its drugs 20% to 30% below the average price in the local drug stores. Indeed, one must have a healthy profit from any commercial enterprise in our competitive society if one is to expect its survival. If this can be accomplished at a saving to the customer, so much the better.[3]

In addition, the clinic pharmacy provides for the interchange of knowledge between pharmacists and doctors. In many private practices there is very little consultation between pharmacists and doctors whereas in most clinics the clinic physician and pharmacist participate in regular conferences. There can be an interchange of information on the quality and effectiveness of drugs with a better understanding by both the pharmacist and doctor of the effect of specific drugs on various disease conditions. This obviates the need for the busy physician to rely on information obtained from the detail man. One comes, in such an arrangement, to rely more and more upon the pharmacist and upon information obtained from such publications as Pharmindex, Medical Letter, Hospital Formulary, and other publications which give information of worth concerning the quality, effectiveness, and relative costs of drugs.[4, 5, 6]

The patient's acceptance of the clinic pharmacy has been indicated in a recent poll of more than one hundred patients, in which 95% expressed complete satisfaction.

Ethics

The selling of drugs by physicians is not of itself a knavish business. It is the nature of the product sold and the method by which it is done that determines the degree of morality or immorality connected with it. If the physician dispenses superior quality drugs to his patients at reasonable prices, one cannot then accuse him of ques-

Continued

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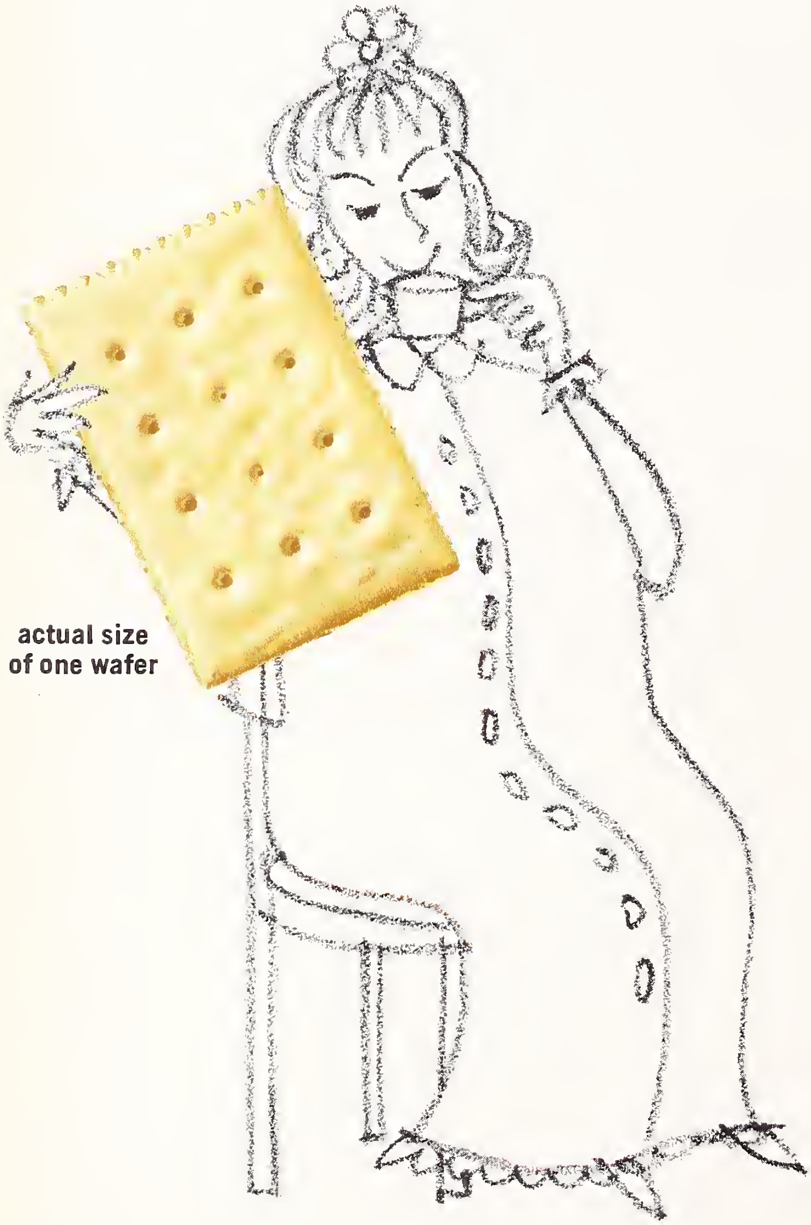

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tionable ethics, for this method has resulted in increased patient welfare and this is more important than all other considerations. Neither good or bad ethics are involved in the function of any particular clinic pharmacy. The ethics of a particular clinic pharmacy can only be determined by an investigation of its method of operation and the motivation behind its conception.

If one assumes that the pharmacist is a specialist, in the broader sense of total medical care, and pharmacy is considered a profession, then would not one be wise in directing his patients to a pharmacist whose professional and ethical standards are above reproach, just as he would direct his patients to the most qualified surgeon or internist? Certainly, there are differences among pharmacists just as there are differences among other medical specialists. If a physician believes that his patient will obtain better medical care by being directed to a certain pharmacist, he might be justified in directing a patient to that particular pharmacist.

Problems Related to Setting Up a Clinic Pharmacy

There are two requirements related to the physical makeup of any pharmacy. The first requirement (in the State of Minnesota) is that the area of a pharmacy be at least 400 square feet. From my own study of the operation of a pharmacy, it would seem that this is a reasonable requirement. The second requirement is that a pharmacy have an "outside entrance." For most clinics this requirement poses no unusual problem if the pharmacy can be located near the outside entrance utilized by patients; although, if it seems more reasonable to locate the pharmacy at an interior location of the clinic, then the requirement of an outside entrance becomes unreasonable. Many clinics, however, have met this requirement by having both an outside entrance and an inside entrance.

A more recent requirement in the state of Minnesota is that a pharmacy be owned at least 51 percent by a registered pharmacist. This requirement does not apply to pharmacies set up before the ruling was made and is not a Minnesota statute but is a requirement set up by the Minnesota State Board of Pharmacy. This requirement is almost certainly not constitutional for it is apparently contrary to the "due process clause" of the 14th amendment to the United States Constitution. A similar situation previously existed in the state of North Dakota until the requirement was tried in court. In that instance the Dakota Clinic at Fargo, North Dakota, obtained a license for their pharmacy as a result of a trial decision by the district court. The district court ordered the pharmacy board to grant the license.[7] However, as of this date, the Minnesota State Board of Pharmacy ruling has not been challenged in the courts, though it would seem inevitable that this ultimately will be done.

The Future of Clinic Pharmacies and Pharmacists

For the future of medicine the pharmacist will probably assume more and more the role of a specialist and consultant rather than that of an isolated merchandiser of pills. This could be best achieved in the clinic pharmacy setting—for in such an environment the pharmacist will have frequent professional contact with physicians. He will engage in conferences with the doctors to determine all policies related to the operation of the clinic pharmacy. It will be his duty, as well as the physician's, to assess the potential value of new drugs. He will be expected constantly to catalogue information on the relative merits of older drugs. His will be the responsibility of always providing more effective medicines for relatively less cost. He will have neither the time, inclination, nor need to sell sodas and cigars.

Summary

A pharmacy provides an integral and important part of modern medical care and, as such, it should be part of any modern clinic which purports to treat, as broadly and effectively as possible, the medical needs of its patients. Toward this end the pharmacist must become more of a professional man; more responsibility must be delegated to him. Through the clinic pharmacy all have something to gain—the patient, the pharmacist, and the doctor.

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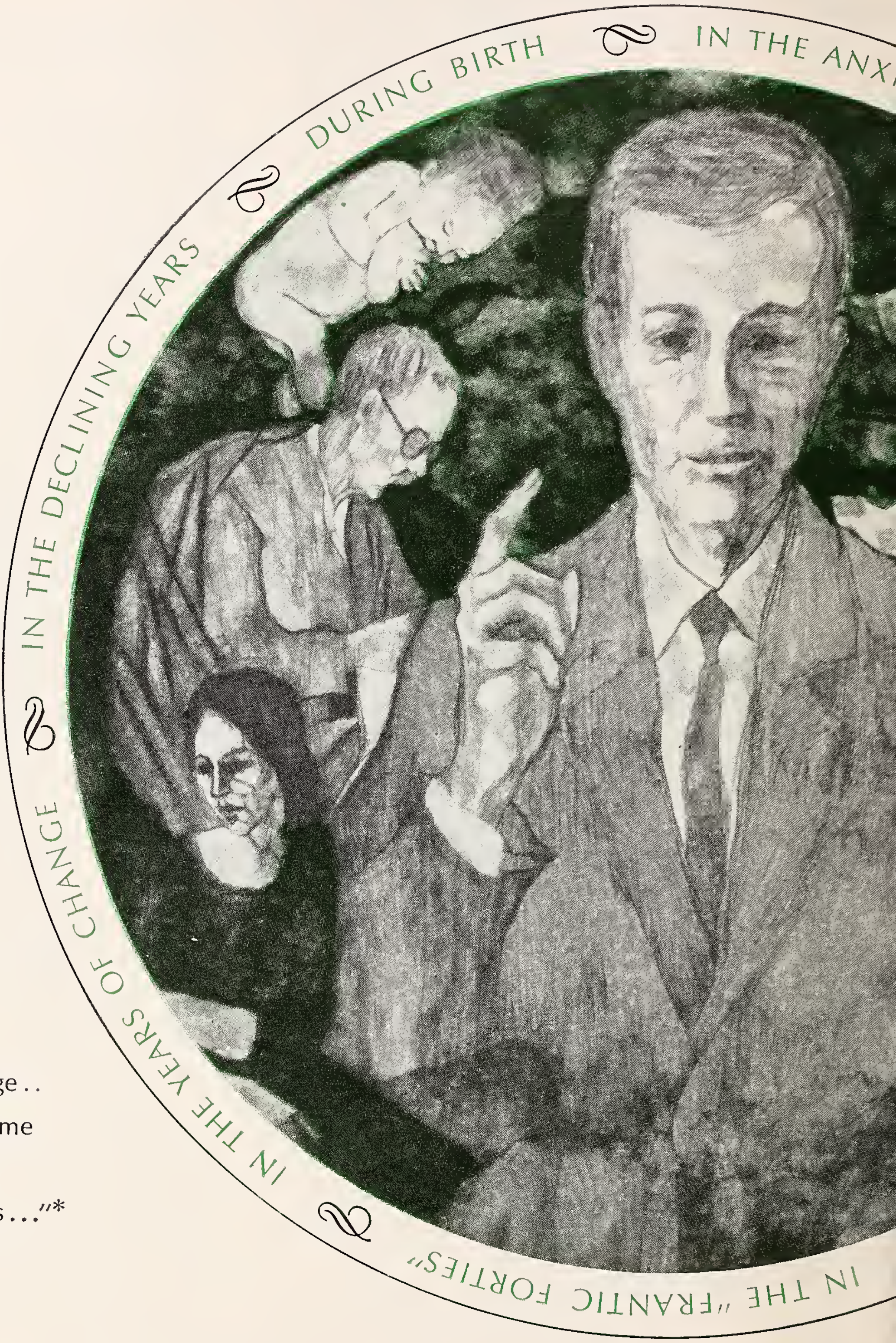
7. Doyle, L. S.: An Rx for Clinics. Presented at the 1957 Conference of the American Association of Medical Clinics—held at New Orleans.

End


DURING BIRTH
IN THE ANX
IN THE DECLINING YEARS
IN THE YEARS OF CHANGE
IN THE "FRANTIC FORTIES"

"All the world's a stage..
And one man in his time
plays many parts,
His acts being seven ages..."*

**As You Like It*, Act II, Sc. 7

D
IN THE EMOTIONAL TEENS
IN PREGNANCY AND AFT

through all seven ages of man

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effective anxiety control with a wide margin of safety

in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

In each of these areas, VISTARIL is often effective alone or as an adjunct to other therapy. For example, in his series of 67 patients, King[1] found that 62 showed remission of anxiety, tension, nervousness and insomnia, as well as alleviation of symptoms associated with various functional and psychophysiological disturbances. He concludes that VISTARIL is well suited for use in the practice of internal medicine.

In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,[2] who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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INDICATIONS: VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

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Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

PRECAUTIONS: Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

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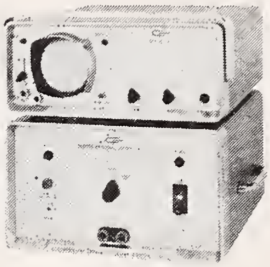

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A Canadian M.D. Looks at Socialized Medicine

N. Bruce McCannel, M.D., C.M.
Regina, Saskatchewan

The following is the text of a speech given by Dr. McCannel at a meeting of the Ramsey County Academy of General Practice.

It is both flattering and heartening to be invited to speak to you today about the momentous happenings concerning our profession in my province and country.

We are all passing through perilous times, and it gives those of us fortunate enough to be at the center of the onslaught, great satisfaction to know that our conferrers in other areas and other lands are concerned about the welfare of our patients—and profession. We know—maybe more certainly than do you—that our struggle is the struggle for all. On this continent we cannot live "Half slave and half free!"

The last two years has seen a tremendous increase in the activity directed towards the socialization of our profession in my province and country.

This force extends back over many years, and in order that you might better understand what is happening and some of the reasons for it, I should give a brief account of some of the intrusions made by government on the practice of medicine.

In 1916, the Saskatchewan government began to subsidize practitioners in rural areas, and indeed began to pay some of them a direct salary.

Care for the tuberculosis patient became a state responsibility soon after the first world war. For many years, the government has been providing psychiatric services at an ever-expanding rate, and has now extended this to some outpatient care.

Early in the 1930's, provision for the diagnosis and treatment of cancer was provided. In 1945, the government began to provide for medical care for old age pensioners, the blind, mothers' allowance cases, and other groups receiving social welfare benefits.

Naturally, the Government has always heralded these provisions as "free services." How anything a government provides can be free, I'm sure none of us know.

I must confess, and not without shame for it now plagues us, that our Saskatchewan College of Physicians and Surgeons has encouraged many of these extensions. We forgot that a little bit of Socialism is like a little bit of pregnancy. Foolishly, we allowed government to dispense our services, and claim the credit for themselves.

During the great depression, many municipal doctor schemes were organized in which the physician was paid a salary or capitation fee, for his services. Many of those plans were converted to a "fee-for-service" type about 1942, and most have since come under private care organizations to the advantage of patient, municipality and physician.

I would like to turn for a few moments to consider what has happened in the realm of our hospitals. The practice of medicine cannot be socialized without controlling the hospitals.

In 1944, the C.C.F.-Socialists came to power in my province of Saskatchewan. During that election campaign, they issued a pamphlet "Let There be no Black-Out of Health" and I quote from it:—

> "The C.C.F. will therefore, set up a complete system of socialized health services, so that all residents of Saskatchewan will receive adequate Medical, Surgical, Dental, Nursing and Hospital care — WITHOUT CHARGE."

Their claim during that campaign was that all of these services would be provided for just over $8.00 per person, per year.

Continued

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> Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (J.A.M.A. Vol. 172, No. 18, April 30, 1960.)

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On the slogan, "Medical Care Without Money and Without Price" the Socialists won the election and set themselves to the task in true socialist fashion. They brought in the planners—from your country and mine—the Ivory-Tower boys—you know, the ones who sit, and sit, and sit, and think, and think, and think. These are the same ones who talk about Capital and Labor and darn few of them ever had any capital, and fewer still ever did any honest labor.

Hospital Service Plan

In 1947, a Hospital Services Plan was enacted in my province. The planners were as correct here, as usual. They estimated the plan would cost $4 million dollars a year. Well, the first year it cost about $7 million, and this year will cost close to $40 million—about $50 for every man, woman and child living in Saskatchewan.

Luck was with them. The socialists gained power just before the end of the war, when Saskatchewan was entering a period of buoyant economic growth and prosperity. Crops were abundant, and our farmers were able to sell their produce. Also, the federal government began to subsidize the less affluent provinces with ever-increasing fiscal grants.

The funds available to our socialist government have pyramided to 10 times and more that available when they first came to power. Not until the past year, have revenues begun to fall.

The hospitalization scheme was and is compulsory, and comprehensive. It is financed by a premium—a premium which began at $10 and is now $48 a year per family. There has been a 3 percent sales tax and the balance is provided from general revenue.

You will ask — "what does the plan provide?" The plan provides for ward bed accommodation, drugs, X-ray, laboratory services, operating rooms, case rooms, and so on in hospital, and now many of these benefits are available on an out-patient basis.

There is no deterrent. Utilization is controlled only by the availability of facilities.

We, of course, have long waiting lists in our hospitals. The waiting period for elective surgery may extend to six months. The public are demanding hospitalization for the most trivial of complaints, and woe be it to the physician who does not serve their demands.

The government has, by controlling the purse strings, gained a great measure of control over our hospitals.

Let me tell you, however, that all is not well in paradise. For the first time in many years, revenues are falling, and the socialists have had to put a ceiling on hospital expenditures—placing, as is their practice, the responsibility on the institutions for maintenance of service.

Now, my friends, we must assess this hospitalization scheme fairly. I don't like it. I have always believed, as your President Coolidge said that: "It is the place of government to be supported by the people, not to support the people." I believe responsible enterprise could have provided all that government has provided, at less cost and more efficiently. Nonetheless, the Hospital Services Plan in my province is overwhelmingly popular, and I doubt that any major change will ever be made in it.

To emphasize still further the popularity of this scheme, the government of Canada introduced it on a national basis in 1957. Today, all Canadians are included in hospitalization schemes with the federal government paying about 50 percent of the cost.

This extension of the welfare state was made by a conservative government, acting on a previous liberal government's legislation. You see all political parties are in the act. All are trying to buy the vote with the voter's own money.

Physician's services

The first major step taken by the socialists towards the provision of our services was taken in 1946. At that time they fostered the formation of Health Region No. 1 in the western part of my province.

A comprehensive compulsory medical care plan was established in this area, under a local lay board of control, but with provincial contributions. Physicians practicing in the area are paid on a fee-for-service basis.

The plan has had many ups and downs. At one time, a maximum was placed on the amount a doctor could earn, with no limit to the amount of work he might have to do, of course. This stipulation had to be removed. The practitioners in this area are now paid a percentage of the fee schedule—about 80 percent, I believe. Continually rising costs finally forced the lay board to institute a deterrent.

Continued

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And when Bayer Aspirin is used as a sleeping aid, patients never suffer the "sedative hangover" which so often follows an induced sleep.

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This scheme is financed by a head tax—about $40-$50 a family. There is also a land tax of about $20 per person plus the provincial government contribution (about 5%).

This plan has not proven to be the ideal its proponents had hoped. It is continually in fiscal trouble, and must almost year by year, increase its costs to the patient.

The patient can only choose from doctors within the region. The plan has seen a great migration of medical men both in and out of the area. It seems that the unit provides a suitable environment for a young man to begin the practice of his profession, but not one in which he wants to stay permanently.

Socialists' Activities

In 1955, the socialists tried desperately to extend this type of medical care. Fortunately for all, this could only be done by a plebiscite. The people opposed the scheme 5 to 1, and we have heard little more of these unit plans since.

The C.C.F. Socialists have been losing favor in my province almost since their original ascent to power. They have not had a majority of the electorate behind them since 1944. They have maintained themselves in power by using the traditional leftist methods of dividing their opponents and of creating false issues. The C.C.F. faced an election in 1960. In late 1959, Premier Douglas announced that the socialists would fight the coming campaign on a promise to provide a compulsory comprehensive medical care plan for the people of the province.

The liberal party—the major opposing party, countered with a pledge to provide a private enterprise plan of health insurance—if the people wanted it.

Our profession was caught quite unprepared. We were neither united, nor vigilant. To put it very plainly and bluntly—we goofed! We do most things well, and believe me, when we make mistakes, we do that well too!

Our profession was maneuvered into opposition to the socialists, and yet there was nothing we could really oppose. We have always favored health insurance. The wily socialists were very astute, and we as a profession showed little or no political acumen. They forced us into opposition, and fought the whole election campaign against the doctors.

Now again, please allow me to digress for a moment. I must admit to you that I am active politically against the socialists.

I want to say to you that every one of us—doctors, lawyers, storekeepers, farmers, all who love freedom—must be active against them, or we will lose our birthright. We must stand and be counted, not as doctors, or as any group, but as people. Freedom has always been our most precious, as well as our most expensive possession. Eternal vigilance is the price of freedom.

However, we must take great care, lest we be divided—as we became in Saskatchewan. This is a favorite socialist trick—to pick on a small group, and to try and make them a common enemy.

How tragic it was that the socialists succeeded. They won the election with just 40 percent of the vote.

The really tragic factor here was, not their victory—for they will soon be defeated—but the success they had in persuading the people that the medical profession was something evil. They convinced the people that our only concern was with ourselves, and not with people. This should make us all hesitate and think a bit. This couldn't have happened 30 years ago.

We must look within ourselves to find the answer. Certainly we are not less interested in our patients now, than were our predecessors.

The great upsurge of scientific knowledge, has, however, made us too conscious of the science, rather than the arts of our calling. Much greater efforts must be made by us all toward improving rapport with the public.

The great mistake we made was in not leaving politics to political parties. No profession can ever defeat one political party—only another political party can do that. Instead, we set ourselves—without candidates, without any hope of victory, against the efficient socialist political might. We did just what the socialists wanted us to do. We allowed them to make us their opposition, the target and the enemy.

During the election campaign, the C.C.F. were very adroit at avoiding setting out of any specifics insofar as a Medical Plan is concerned. They used all the usual catch slogans about being our brother's keeper, and "there must be no second class citizens" and so on—and on—to great emotional advantage. They promised all. You know, the socialists are the most promising politicians in

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the world today. They'll promise anything in order to gain their ends. If you can believe it, the Premier even promised that any Medical Care Plan the government might introduce, would be completely acceptable to the doctors.

Health Needs Committee

Well, you know what usually happens to such election promises. The first major move made by the government towards a Medical Care Plan, following the election, was to appoint a committee, ostensibly charged with surveying the whole of the health needs of our province.

What a committee! Three members were appointed by our profession, one by the chamber of commerce of Saskatchewan, the remaining eight were appointed by the C.C.F. government, or C.C.F. supporting groups. Thus, the government had a subservient committee, controlled by it, eager and anxious to do its bidding.

Even this captive group didn't jump quickly enough, and the government forced it to bring in an incomplete interim report so that the socialists could get their plan for state medicine into law before the federal election campaign—now beginning in Canada.

Labor Union Recommendations

It might be well for me to tell you about some of the presentations made to this fact-finding group.

Many interested organizations presented briefs to the committee. Two were of prime importance. The submission by the labor unions (who control our government and who, incidentally, were given equal time to that of the medical profession in the presentation of their brief) called for a total system of state medicine with salaried physicians and all the rest.

Medical Profession's Recommendations

Our profession's submission recommended that the government subsidize those who were indigents and the lower income groups, and others in need who were not served by private insurance plans—so that these groups, less than 20 percent of the people, could be covered by our very efficient private plans which now cover over half our population.

This would have cost the government about $3-6 million dollars a year as against the $23 million dollars, or more, of the socialist scheme. Our profession's suggestion would have placed class second and the public first.

Now, I told you that the socialists have been losing favor since 1944. It is almost certain that they will be defeated at the next general election in Saskatchewan in 1946. They have never been a factor outside of Saskatchewan.

The Labor Party Plan

Three months ago, in an effort to become a national party, the C.C.F.—out of favor with their original supporters, the farmers—joined with the Canadian Congress of Labour, to form the new democratic or labour party. Mr. Douglas, our Premier, was made its national leader. This required him to leave the provincial scene. This national socialist party is financed from union funds, or a compulsory check-off system. True democracy!

Now, Mr. Douglas desperately wanted his Saskatchewan Medical Care Plan Bill to wave before his labor supporters in Eastern Canada.

Hence the haste! To hell with Saskatchewan —we're through there anyway!

A special session of the Legislature was called to pass his needed bill.

Well, my friends, the medical care bill, as passed by the labour party, is one of the most vicious pieces of legislation ever passed in a free country. Our profession was given not a single thought. In fact, we were not even legally recognized.

The Act is now law.

As a crowning affront to the profession, the former head of the labor unions in our province has been made Minister of Health, charged with the specific creation and administration of the scheme for state medicine.

What could we do?

I am proud to say that we are now fully united. We are pledged to maintain our freedom and dignity. The only answer we could give—we gave!

We will have nothing to do with a government controlled scheme for state medicine.

Ninety-eight percent of the doctors in my province are now pledged to resist the onslaught being made against us by this minority socialist government.

Here, the lines are now drawn.

An irresistible force will apparently meet an immoveable object. You know some of the socialists have even suggested that it be made a criminal offense for us not to submit to government control.

Continued

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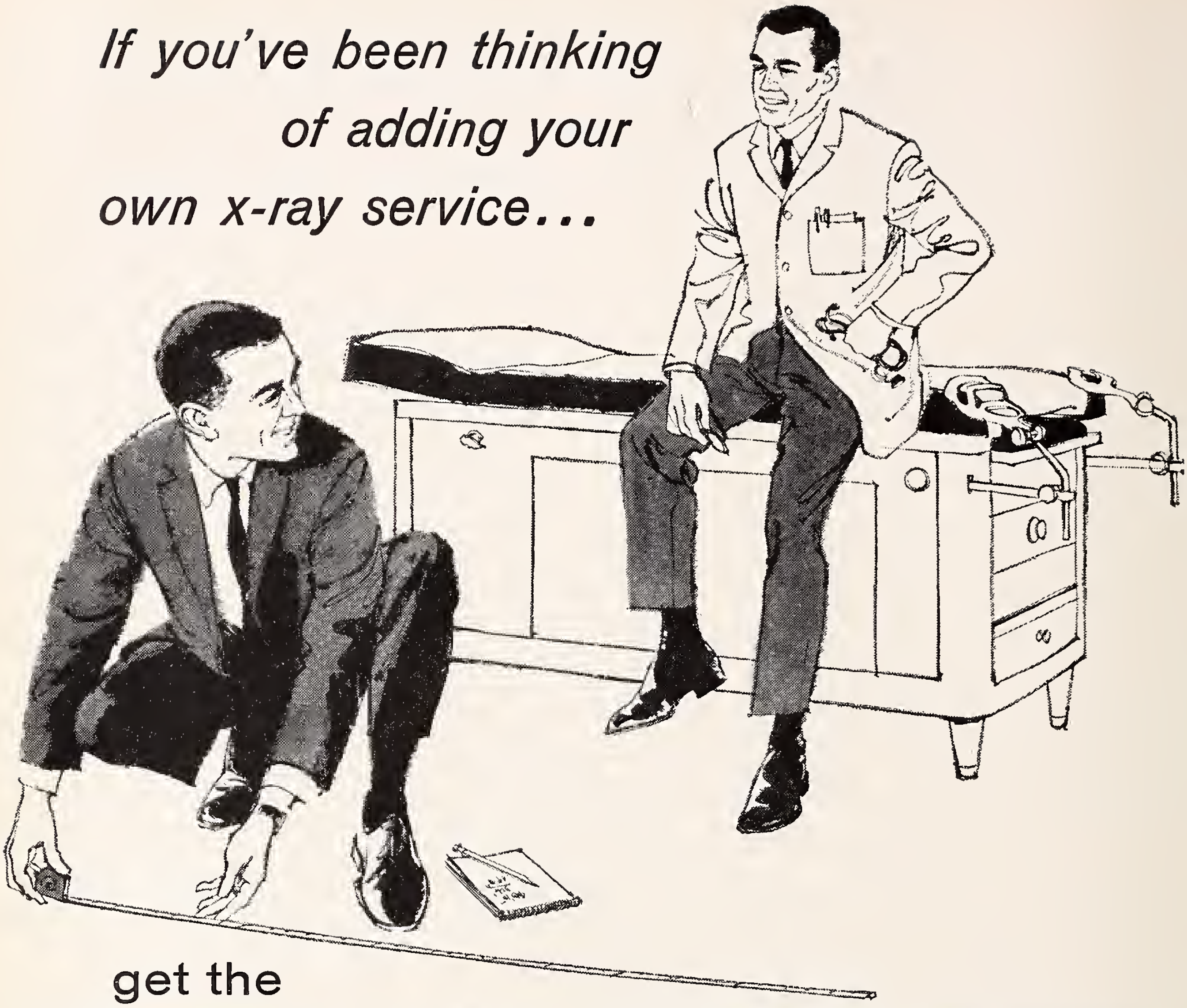

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We may even go to jail to maintain our professional freedom. I emphasize to you that we are not a small group defying responsible government, for this government is a minority one. It has lost three by-elections since the last provincial election—even losing the Premier's own seat three weeks ago by a large majority.

The government has been challenged repeatedly to place the issue before the people in a plebiscite. They know it would be defeated, for the public are, in the main happy with the medical care they are now receiving.

For the first time since the C.C.F. came to power, the socialists had to admit that social services had to be paid for. When they presented their initial tax bill of $23 million dollars to start their Medical Care Plan, they made Jesse James look like a piker!

Now, ladies and gentlemen, I said at the beginning that we are passing through perilous times. Perilous they are, but exhilarating, and rewarding and challenging too. There is never a challenge without an equal opportunity. I hope in days to come, it may be said of us, as it was of another small and hard-pressed group—"this was their finest hour."

We have seen our great profession maligned, castigated, cursed, and ridiculed; also respected, admired, revered and even loved. It saddens us to see our young people foresaking our great calling, for our medical schools are denuded. It distresses us to face the possibility of losing our right to best care for our patients.

We will continue to serve, but will serve best if allowed to be independent and not subservient to government. From our beginnings, the doctor has charged a fee to those who could afford it, but he has never refused his art or his science to those who could not pay.

The socialist philosophy brings all people down to a common level. We, as responsible enterprisers, believe in raising all to the maximum level. Our way has proven very successful in our two countries. Nowhere is the general standard of living, or of medicine, higher.

What lies ahead?

There is little doubt that all Canada will soon have some form of health insurance. Both major political parties are pledged to provide some form of health insurance. Consultations are now being held towards finding a suitable method for the provision of medical care.

This will not be a socialist plan, I am sure, but a free enterprise one of health insurance. I expect it within two to three years. We, as a profession, favor such a provision which would make available assistance to those who need it.

Why, we have provided such assistance since the very beginning of our profession. But we will have no government control!

We in Saskatchewan must hold on. There will probably be some dark days just ahead. We will prevail. We are determined. Adversity has united our profession as never before. No one will go without needed attention, but we will not become the pawns of government.

The principles for which we stand are the principles that brought our forefathers to these two countries, the principles inherent in our way of life.

We in Saskatchewan are prepared and even eager to meet the price, firm in the knowledge of the support of our colleagues, and knowing that "Right Makes Might."

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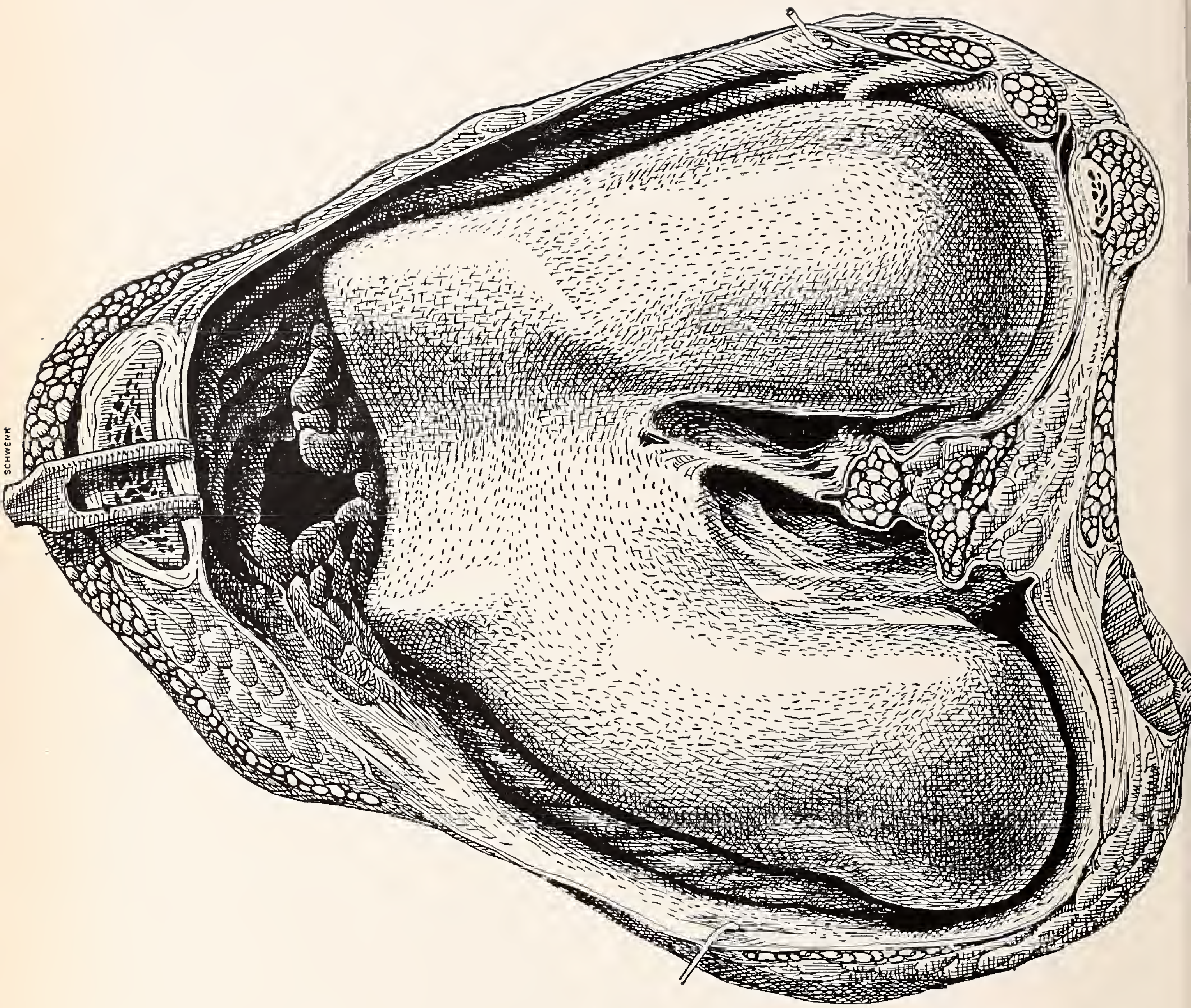
The Doctor and The Press



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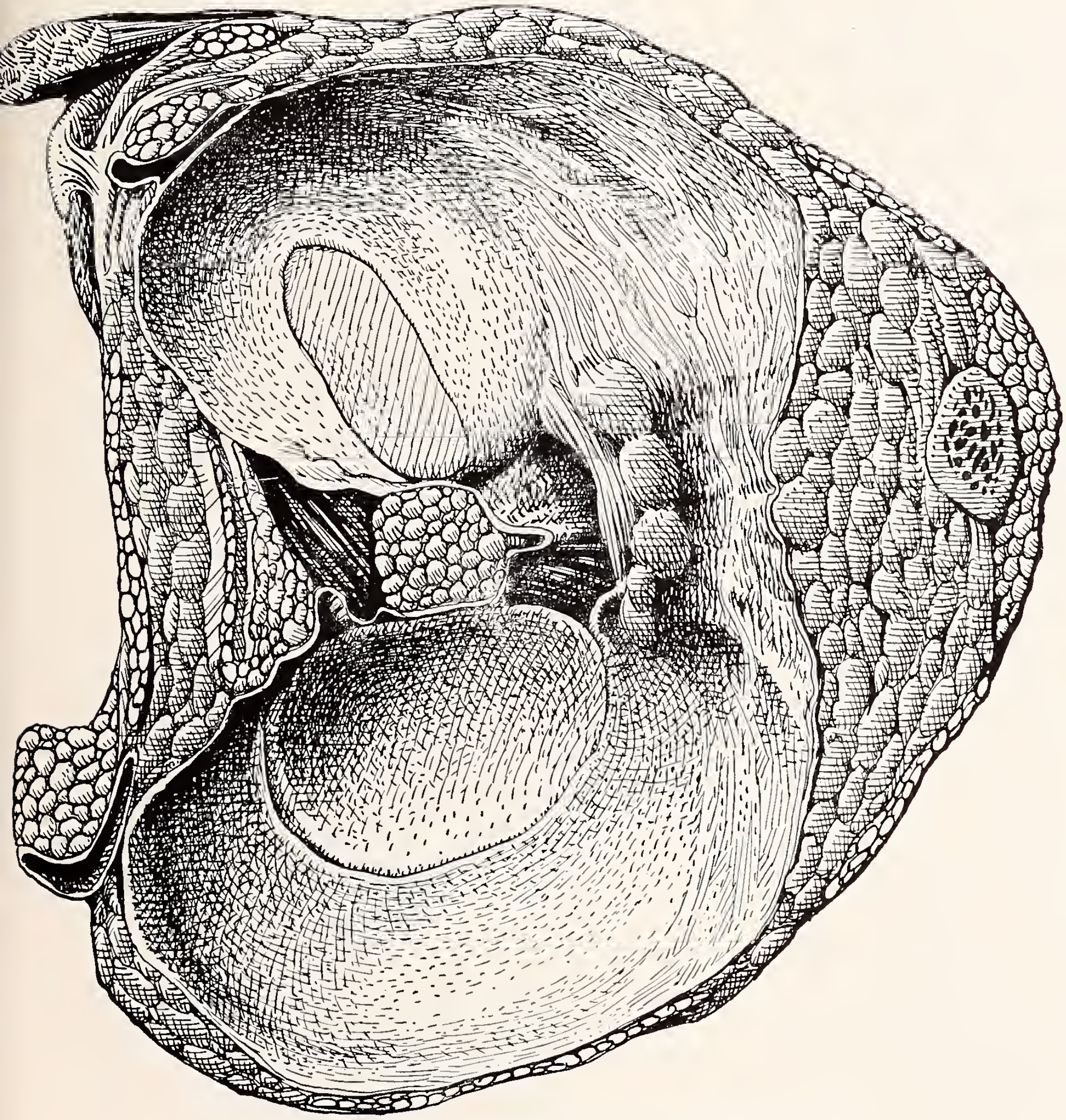

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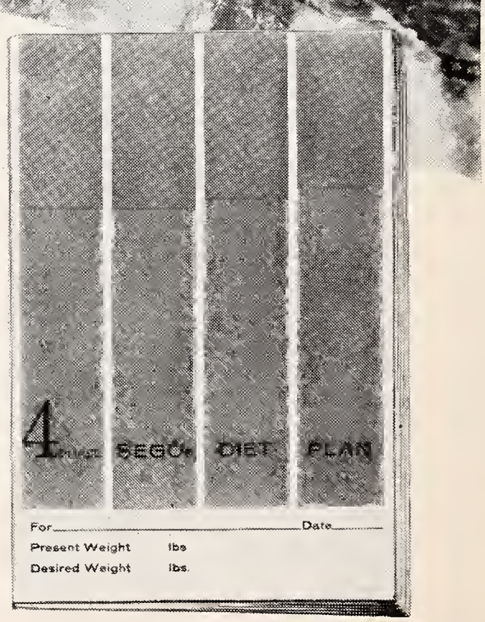
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IN BRIEF

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Medical Economics

IOWA DOCTOR ADDRESSES MINNESOTA NEWSPAPER EDITORS ON ELDERCARE

Richard D. Liechty, M.D., Assistant Professor of Surgery at the University of Iowa, in an address before the 96th Annual Convention of the Minnesota Newspaper Association in St. Paul on Friday, February 16, challenged the wisdom of hitching medical care for the aged to a program of social security which in 1960 was already operating at an almost 2 billion dollar deficit.

The idea of social security "insurance," said Dr. Liechty, is ridiculous because no premiums are paid. In fact, the present system has already promised today's active and retired workers $350 billion dollars more in benefits than they have, or will pay in social security taxes. This staggering deficit, said Dr. Liechty, will have to be made up sometime, and money has to come from somewhere. This means that the bill will have to be paid by future workers, by the taxpayers, or by the recipients of the benefits themselves, through inflation.

Dr. Liechty pointed out to the newsmen that surveys in Wisconsin and Kentucky showed that only 5-7 percent of persons over 65 were unable to afford medical care. The statistic so often used—that 60% of persons over 65 have an income of less than $1000 a year is misleading, Dr. Liechty said. He pointed out that if a man is employed at a salary of $50,000 a year, and his wife has no job, then you can say that 50% of that couple made less than $1000—or even $5 a year.

"We doctors," said Dr. Liechty, "would like to go further than the social security plan. We would like to give medical help to everyone who needs it, regardless of age or social security status. The solution to the current medical problem is painfully obvious. The most beneficial thing government could do is to help industry and private incentive by complete and partial subsidizing of private insurance premiums for all who need help. Voluntary, non-cancellable major health insurance must be made available to every American."

Dr. Liechty told the editors that fear of socialized medicine is one of the main reasons why medical school applications have dropped off. He noted that in a five-year period the ratio of medical school applicants has dropped from 5 applicants per 1 admission to 1.5 applicants per 1 admission. "Social legislation" said Dr. Liechty "is like a genetic mutation—once passed it passes from generation to generation and must be accepted whether good or evil. We can tolerate waste and chiseling for many years because America is a wealthy nation but the impact upon human ideals in the long run can be disastrous. Psychiatrists say that our mental hospitals are filled with emotional cripples who have been denied the right to respond to challenge in their early years and cannot cope with life. Challenge is as necessary to the mind and spirit as a balanced diet is for the health of the body." The Iowa doctor cited as a case in point the Indian population—"We have given these first Americans food, clothing, farm machinery, hospitals and doctors. We have given them refuges for the body but little incentive for the spirit. I believe that the spirit of man is most important.

"HEW has criticized us for the 'means test'," Dr. Liechty said. "However, every HEW program has a means test—VA, public housing, social security, union relief. Charity was not always a dirty word," said Dr. Liechty. "It is referred to in the Bible with honor and by our forefathers."

End

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The Art of Medicine

PR

Carl H. Woyke
Editor

Ten Years of Public Relations Progress or Procrastination?

With the publication of the 1961 nationwide survey on county medical society activities, some vital statistics become available on medical public relations projects.

More than ten years ago American medicine conceived a sound public relations program based on community service coupled with corrective measures to improve medical service.

With the publication of the 1961 county activities survey, now available from AMA's Council on Medical Service, it is possible to check progress on some of these important projects. PR DOCTOR has assembled some comparative figures from past county surveys with these results:

*Grievance committees—Though some variations may be traced to differences in total number of societies replying to surveys conducted every two years, it appears that the number of societies setting up committees is leveling off:

1961—692 or 60% of those reporting have committees
1959—707 or 59%
1957—629 or 63%
1953—479 or 51%
1951—42 state and 575 component societies reported committees

*Emergency call plans—If figures are accurate, there has been a reduction in the number of societies operating emergency call plans in recent years:

1961—544 or 47% of those reporting have plans
1959—590 or 49%
1957—549 or 55%
1953—432 or 47%
1951—364 (% not available)

*Speakers bureaus—The drop in number of speakers bureaus between 1953 and 1957 of 9% was slightly offset by a 1% increase this year:

1961—255 or 21% of those reporting have bureaus
1959—figures not available
1957—200 or 20%
1953—272 or 29%
1951—figures not available

*Press relations—Development of press codes of cooperation was selected as one indication of effort in this vital area:

1961—533 or 46% of those reporting have codes
1959—314 or 26%
1957—409 or 41%
1953—figures not available
1951—figures not available

What progress has been made in publicizing backed-with-service promises to provide medical care to all who need it, regardless of ability to pay, the most important plank in the Basic Eight Plan? In 1961, after 10 years of promotion, explanation and recommendations of such plans, exactly 177 societies report they

Continued

20
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operate formal programs of this nature. Some 663 societies or nearly ¾ of those reporting say they make such guarantees, yet few visible indications of such offers have come to AMA attention. Ironically, such service probably is given in every town and hamlet in the U. S., but physicians won't take credit for it.

With how-to-do-it information for the asking, it's hard to figure why some medical societies haven't surged ahead faster in making public relations progress. Some, admittedly, have responded remarkably. Others still drag their feet.

. . . Society Size No Barrier

Size of society has no important bearing on adoption of a good public relations program incorporating the Basic Eight elements. Few of these projects require full-time personnel or a great deal of money. All do require heightened awareness of the importance of public service-type public relations by the members of the society.

To those societies who are carrying out energetic programs, AMA takes off its hat. Orientation courses for new members, for example, are increasingly popular with 199 of 1163 societies sponsoring them in 1961. About 100 societies now say they publish periodic PR newsletters to keep the PR philosophy alive among members. Significant increases in some type of press relations activity, whether it be development of a press code, local radio or TV show, or medical press conference, are reported. Health fairs and health forums and other health educational activities continue to be popular along with sports injury clinics and safety campaigns. Stepped up activity in the areas of aging, civil defense, school health and mental health speak well for medicine's public service spirit.

Yet it is impossible to reminisce without concluding ruefully that had medicine enthusiastically implemented the Basic Eight ten years ago the legislative battle now so crucial might have been won conclusively in a matter of weeks. With every society in America able to point to a record of fine service and a public guarantee of care for all, regardless of ability to pay, "free" government plans would have seemed senseless and superfluous.

It is not too late for action—yet.

Want to Increase Attendance? Survey Points to Success Tips

The 1961 County Society Activities Survey* reveals a clue to medical societies hoping to increase meeting attendance.

More than half of the 1163 societies reporting say their members prefer meetings featuring scientific rather than socio-economic topics far outdistanced scientific ones as attendance getters. Interpreters of the Council on Medical Science survey say the reversal may be due to tremendous recent advances in scientific medicine.

The monthly meeting still is preferred by almost 70 percent of the societies. Smaller societies, however, prefer to meet on a quarterly basis since transportation to meetings outside metropolitan areas often poses a problem. Well-known speakers still bring out biggest crowds among these societies.

The trend toward increased attendance at meetings of both large and small societies continues, with overall attendance for both groups remaining at 50 to 75 percent. Many smaller societies with less than 50 members report larger average attendance due primarily to the fact that meetings are held less frequently and there are fewer outside organizations competing for the physician's time.

A majority of larger societies employ executive secretaries and office personnel. About twenty-five percent now also employ public relations directors. Feasibility of hiring professional staff depends upon the society's size and dues structure, according to the survey, yet more and more societies now are recognizing the advantages of full-time paid personnel to provide continuity of society operations.

End

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Medicine
IN WRIGHT COUNTY, Part II

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

In the following pages all of the physicians who began to practice in Wright County prior to 1901 are listed alphabetically. It was unavoidable that some of the biographical sketches are very incomplete as the records for early practitioners are rather scant; many of the early pioneers spent only a short time in the county leaving only a very faint imprint on the medical development in the county.

PIONEER PHYSICIANS

Curtis B. Ames came to Wright County in 1872, settling in Delano. He was the son of Dr. A. E. Ames, one of the earliest physicians of Minneapolis, and supposedly was graduated from one of the best medical schools in the country. He served in the Civil War and shortly afterwards, in April, 1866, he located in Chaska, Scott County.* From there he moved in 1869 to Watertown, Carver County, just across the Wright County line. There he became very popular and was elected county coroner in December, 1870 on the Democratic ticket at a yearly salary of $450. In the fall of 1872, as mentioned, he moved to Delano. It seems that very soon after his arrival he was ordered by the town supervisors to check on a supposed case of smallpox. Dr. Ames reported there were several cases and a great deal of vaccinating was done. Further investigation revealed some of the cases were actually measles "but the physician and the superintendent of the (temporary) hospital cost the town the modest little sum of $224.00."**

His office was at first in the drugstore, but in September it was at the corner of Railroad Ave. and River street. He remained in Delano at least ten months† before moving to Vickburg, Mississippi. He could not have remained there long as he was in the Delano area in March, 1875 where, with Drs. Catlin and Cady he amputated a leg because of a crushed foot. In April of that year he practiced in Howard Lake, but in May he lived in Watertown, Carver County.

Not much is known of his stay in Watertown and he may have returned after a short time. In 1879 he was active in local affairs in Delano and, with Drs. Catlin and Rounsevell, he participated in the deliberations of the newly organized Village Improvement Association, especially on the question of the sanitary conditions and the needs of Delano. In the spring of that year he sold his office on River Street and moved next door to Close's drugstore on the same street. In July he moved his office again - to the Atwater Building on Franklin

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* See "A History of Medicine in Scott and Carver Counties," MINNESOTA MEDICINE, May, 1948, p. 514-15.

** According to a history of Wright County which appeared serially in a Wright County newspaper in 1882.

† His professional card appeared in the Delano Newspaper, *The Big Woods Citizen,* from April 19, 1872 until February, 1873.

Continued

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Ave. - and a month later, to his home. In the fall of 1880, he planned to settle in Minneapolis and even sent his family ahead (*The Delano Eagle,* August 26, 1880.)

In June, 1881, a newspaper item tells that, assisted by Dr. Catlin, he performed a delicate and interesting operation — the removal of an "incisted tumor" — from the neck of a Greenwood man. The tumor weighed four ounces and was on exhibit at Closes's Drugstore. He did not return to Delano, however, until late in 1882 as the *Delano Eagle* of December 14 reports, "Dr. C. B. Ames has again located at this place." It was at about this time that he became active in politics, running for Congress on the Democratic ticket and making a speech at the Democratic legislative convention in Buffalo. It seems he spent more and more time on politics and his standing in the county began to deteriorate. The *Delano Eagle* prints with gusto any detrimental report, and liquor was one of the causes. For a year or two he seems to have left the environment of Delano, but in April, 1885 his professional card appears again in the *Delano Eagle* and the paper announces his return to Wright County. This time he located in Rockford, and soon was appointed chairman of the Board of Health. Alcohol was still his enemy, and in no time his position on the Board of Health was taken over by Dr. Fassett. His medical services, however, were sought by many, as the stories of some of his cases in the newspapers seem to indicate. Thus, he spent several hours in fixing up an injured man who looked "as if he had gone through a meat grinder."‡

Fortune apparently smiled on him for a while; he gave up his old quarters and moved over Gurney and Hall's and had his rooms "fitted and furnished in Metropolitan style."# Only a month later he was over the Wright County Bank and announced that he would visit Delano three days every week. In the spring of 1887 a newspaper states that "Doc Ames is the busiest man in town," but only two months later the same paper ## announces his planned move to Hannover because "he can be much better accommodated and appreciated in that village." This, however, did not materialize, although he moved his office to the old saloon building. Restless as he was, he moved again to Delano, opening an office in the building south of the railroad track, but announced to his Rockford patients that he would visit there occasionally.

His standing in the community became worse again, and there was constant talk and speculaton whether he was going to move to California or enter a Soldiers Home. In December, 1888 the newspaper announced "Doc Ames has folded his tent and departed."*

In the following year (1889) he spent some time at the inebriate asylum at Rochester, but in November he was practicing again, because a news item tells of his being called professionally to St. Michael. According to listings in medical Directories he was located in Rockford in 1890 and 1893, and in 1896, again in Delano.

During this later stay in Delano, Dr. J. J. Catlin knew him personally. Dr. Ames came from a good family, his father was a pioneer physician in the true sense, being one of the earliest doctors in Minneapolis, and his brother was mayor of Minneapolis. He was a distinguished looking man of the old school, with a high hat and Prince Albert when dressed up for some gathering. During those years he was an advanced alcoholic and most of the time unable to act in any capacity. He had some practice but not enough to live on, and part of the time he lived in a room in the corner of an old abandoned blacksmith shop and appeared on the streets as a sad reminder that too much alcohol over a period of years will down anyone. The late history of his life would indicate that when he was so popular in early years, at Chaska and Watertown, he must have been

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#**Delano Eagle,** Dec. 16, 1886.
##**Delano Eagle,** April 28, 1887.
***Delano Eagle,** Dec. 12, 1888.

Continued

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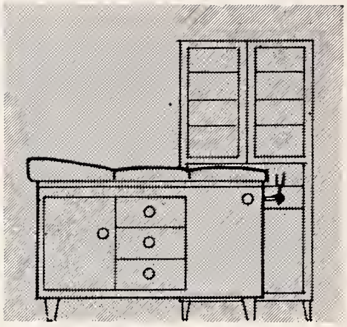

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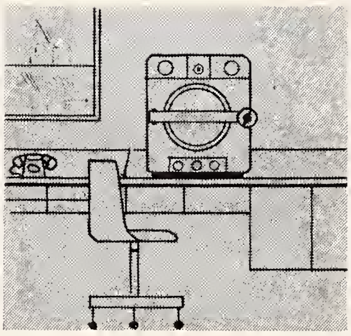

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a good fellow at the saloons which abounded in those days. Some of the erratic movements of other early doctors, moving from one location to another after short stays, carried rumors of a similar cause. Dr. Ames was a gentleman when sober and had many friends. He was well qualified as a doctor. He left Delano in 1898, or shortly after, and there is no record of any other practice. He was licensed in Minnesota January 29, 1884.

Ralph Ames lived in Rockford as early as 1874 and was postmaster there for about twenty years. There is no record of his practicing medicine there. He died at Rockford and was buried there.

John N. Arnold — The *Monticello Times* of June 4, 1857 reports that Dr. John N. Arnold was attacked by some assailants and shot. He was on his way home from Buffalo Lake and the attack occurred near his home. The culprits were apprehended. The 1860 census report of Wright County lists him as a physician. He was born in Maine about 1830, and his wife Lorenda was born in New Brunswick about 1829. In 1860 they had four children, the older two, Celinda and Chlorinda, having been born in Canada, the younger two, Florinda and Charles H., in Minnesota. As Chlorinda, the second oldest child, was five years old in 1860, he must have come to Minnesota between 1855 and 1857.

On July 30, 1903 the *Blue Earth Register* printed a story of a John N. Arnold under the title "In Pioneer Times." There are many similarities in the biographical data which make it highly probable this is the same man, although nothing is mentioned about his practicing medicine.

According to this account, he was born in Penob, Scott County, Maine August 1, 1827, the son of a farmer. He remained in Maine until the age of twenty-two and married there Miss Orlinda Woodworth in March, 1849. In 1850 the couple moved to Canada where they remained five years. Then they moved to Wright County, Minnesota, where they also stayed five years. From there they moved to Sauk Centre, Stearns County (about 1860). Arnold enlisted in the 2nd Minnesota Light Artillery and served two years. In 1862 his family lost everything during the Indian Uprising and moved to Wabasha, where the head of the family joined them after the war. After three years they moved to Rome Township, seven miles east of Ellmore. In 1873 they experienced the "Great Blizzard." Arnold resided in Ellmore eight years. His wife was burned in an accident. The Arnolds had seven children; Celinda, Clarinda, August F., Charles H., Rhoda N., Jessie E., and Nellie C.

William E. Aubin — We first learn of his presence in Wright County from a news item in 1881 which states that Dr. Aubin of Waverly assisted Drs. Cady and Dean in the successful amputation of a leg.* In the following year we read in the same newspaper that Dr. Aubin returned from the Red River Valley where he was prospecting for three weeks. He traversed the whole length of the Valley, extolling it as the finest country. He planned to locate in the northwestern part of the state ** and early in the following year a news item states that "Dr. W. E. Aubin formerly of Waverly located in Perham."†

Dr. William E. Aubin, a graduate of the University of Victoria College, Montreal, in 1879, was born in St. Anicet, Quebec, Canada March 2, 1852. He was licensed in Minnesota in 1884. Aside from his sojourn in Wright County, he practiced in Perham, Otter Tail County from 1883 to at least 1886, in Litchfield, Meeker County, in 1887,‡ in St. Paul (1889), Stillwater, Winona, Racine, Wis., and in Minneapolis.

He may have come to Wright County just to get his bearings and to look for a suitable location, and his practice there probably did not amount to much. He died November 25, 1910.

Continued

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*Wright County Eagle (Delano) July 2nd 1881.
**Ibid. June 29th 1882.
†The Delano (Wright Co.) Eagle, Jan. 25th 1883.
‡According to a Meeker County newspaper item of April 14th 1887 which called him "a pleasant gentleman" ("Medical Men of Meeker County to 1900" by Harold E. Wilmot; privately printed, Litchfield, Minn., 1956 and Minnesota Medicine 1958-59).

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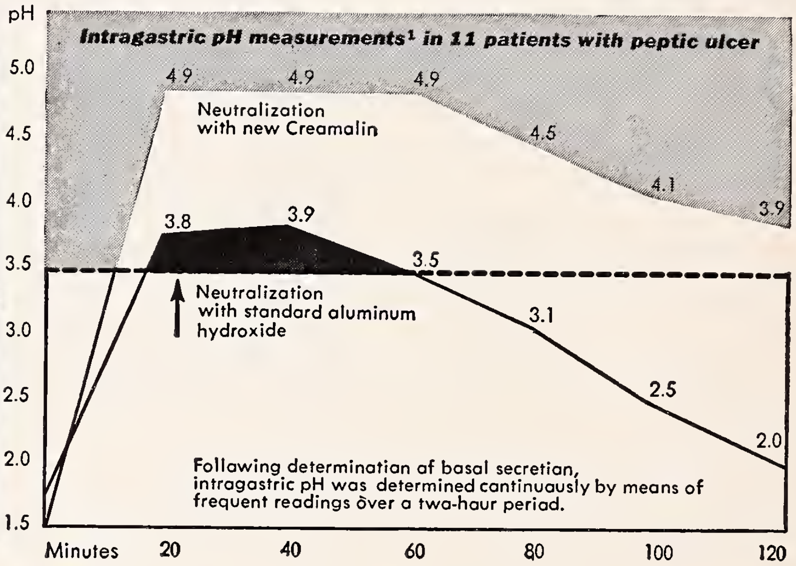
Intragastric pH measurements¹ in 11 patients with peptic ulcer
pH
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
4.9
4.9
4.9
Neutralization with new Creamalin
4.5
4.1
3.9
3.8
3.9
3.5
Neutralization with standard aluminum hydroxide
3.1
2.5
2.0
Following determination of basal secretion, intragastric pH was determined continuously by means of frequent readings over a two-hour period.
Minutes
20
40
60
80
100
120

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Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. New Creamalin tablets are pleasant tasting and smooth, not gritty. They do not cause constipation or electrolyte disturbance.

Dosage: Gastric hyperacidity—from 2 to 4 tablets as needed. Peptic ulcer or gastritis—from 2 to 4 tablets every two to four hours.

How Supplied: Creamalin Tablets, bottles of 50, 100, 200 and 1000. Also available: New Creamalin Liquid (1 teaspoon = 1 tablet), bottles of 8 and 16 fl. oz.

References: **1.** Schwartz, I. R.: *Current Therap. Res.* 3:29, Feb., 1961. **2.** Beekman, S. M.: *J. Am. Pharm. A.* (Scient. Ed.) 49:191, April, 1960. **3.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:381, July, 1959. **4.** Data in the files of the Department of Medical Research, Winthrop Laboratories. **5.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:384, July, 1959.

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FOR PEPTIC ULCER • GASTRITIS • GASTRIC HYPERACIDITY

Lau Bach, whose name appears occasionally in the Wright County Newspapers in 1879 and 1880 may have resided for a while in Wright County, although most of this period he was located in nearby Watertown, Carver County. He must have been fairly well known in Wright County because news about him apparently was of interest to readers when he moved his office, or had a new buggy made, one of his patients cut off a hand accidentally, etc. In August, 1880 we learn that "Dr. Lau Bach leaves soon."#

Nothing is known of his medical background. He apparently was not licensed.

#**The Eagle (Delano),** August 19, 1880.

E. Balcome, practiced in Wright County from at least 1872 through 1876. His card appeared in Wright County newspapers from March 1872 through 1875: ## "Physician and surgeon, Delano, Minnesota. Office at residence on Third street." On October 27, 1875 the *Wright County Eagle* carried the statement that he was not going to be a candidate for coroner. He moved to Howard Lake in 1876 where he remained at least through the first half of the 1880's, as a news item from Howard Lake states, "Dr. Balcomb (Sic) and family have gone for a visit to Massachusetts."*

He is no doubt identical with Dr. Edwin F. Balcome who was born in Douglas, Mass., August 20, 1825 and was hospital steward during the Civil War, after enlisting with the Massachusetts 25th Regiment. He graduated from the Eclectic College of Medicine in Philadelphia in 1866, practiced in Sterling, Mass., and then in Clearwater, Delano, and Howard Lake, Wright County, and finally in Macalester Park, St. Paul where he died, December 5, 1897. He was the father of Dr. Frank Ernest Balcome, who was born in Delano in 1872 and died in 1933, and the grandfather of Dr. Milton M. Balcome of St. Paul.**

##**The Big Woods Citizen** (Delano), March 29, 1872. **Wright County Times,** 1872, **Wright County Eagle,** 1875.

F. M. Ball, a physician of the eclectic school, was born in Pickaway, Ohio May 27, 1839. He studied medicine at New Albany, Indiana and at the Marion County Medical School, Kentucky. From 1861 to 1864 he served in the Civil War and then came to Minnesota. In 1874 he settled in Carver, Carver County, and apparently was for a short time in Jordan, Scott County, and in Cokato.

In 1884, Dr. Ball was in Wright County, but it is not quite clear whether he settled first in Howard or in Montrose. The *Delano Eagle* of March 3, 1884 announced that his arrival in Howard was expected and in October an item tells of a "Dr. Ball Building."† In August, however, he was in Montrose and had a drugstore in Oscar Crouser's store and when the building was sold he moved his drugstore into the Marsh Building in September.‡ In April, 1886 he announced his intention of moving into a building owned by W. H. Wright, where he planned to "open a first class drugstore."# In 1887 he again resided in Howard but came to Montrose fairly frequently. In 1890 he was one of four physicians practicing in Howard. His interest in the drug business continued and he manufactured and sold remedies for pulmonary diseases.##

It seems that he was not licensed in Minnesota as he is not listed in the "Official Register of Physicians, Minnesota, 1883-1890." His personal appearance was reported as good while he practiced in Montrose, but it seems he was not a very successful practitioner. He is remembered as walking or driving an old horse on calls in the village or in the country. He is listed in Howard Lake as late as 1893 (but no longer in 1896).

*__Delano Eagle,__ Dec. 17, 1885.
*Information supplied by the Minnesota State Board of Medical Examiners.
**Upham and Dunlap, "Minnesota Biographies, 1655-1912."
†**Delano Eagle,** Oct. 10, 1884.
‡**Delano Eagle,** Aug. 28 and Sept. 18, 1884.
#**Delano Eagle,** April 8, 1886.
##"A History of Medicine in Scott and Carver Counties," Minnesota Medicine, May, 1948, p. 515 and "History of the Upper Mississippi Valley," 1881.

(TO BE CONTINUED)

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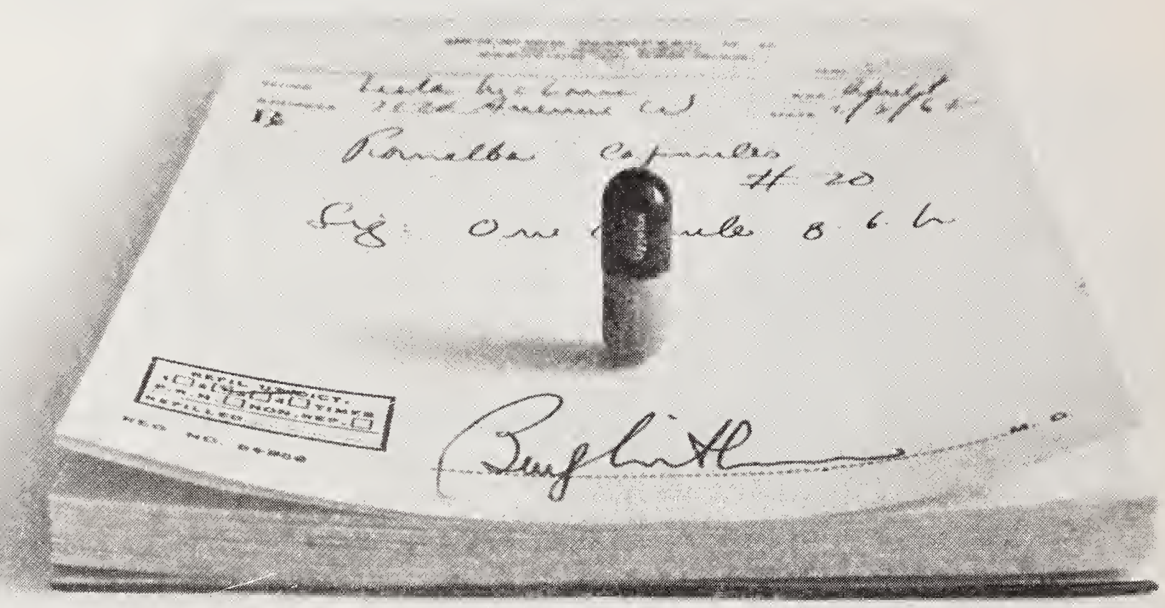

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Panalba* product information

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

Usual Adult Dosage: 1 or 2 capsules three or four times a day.

Side Effects: Panmycin Phosphate is well tolerated clinically and has a very low order of toxicity comparable to that of the other tetracyclines. Side reactions are infrequent and consist principally of mild nausea and abdominal cramps.

Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

Urticaria and maculopapular dermatitis have been reported in a significant percentage of patients treated with Albamycin. Upon discontinuance of the drug, these skin reactions rapidly disappeared.

Warning: Since Albamycin possesses a significant index of sensitization, appropriate precautions should be taken in administering the drug. If allergic reactions develop during treatment and are not readily controlled by antihistaminic agents, use of the product should be discontinued.

Total and differential blood cell counts should be made routinely during the administration of Albamycin. If new infections appear during therapy, appropriate measures should be taken; constant observation of the patient is essential. If a yellow pigment appears in the plasma, administration of the drug should be continued only in urgent cases, and the patient's condition closely followed by frequent liver function tests. In case of the development of liver dysfunction, therapy with this agent should be stopped.

*TRADEMARK, REG. U. S. PAT. OFF.

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A family of obesity-control aids combining appetite control and nutritional supplementation. Four dosage forms from which to choose; each containing dextroamphetamine with a barbiturate to prevent excessive central stimulation, and vitamins to supplement the restricted diet:

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Vio-Dexose chewable tablets, with dextrose and dextroamphetamine, provide a dual attack on hunger and allow dosage flexibility.

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Dextro-Amphetamine Phosphate	5.0 mg.	10 mg.*, 15 mg.**	2.5 mg.
Phenobarbital	16 mg.	32 mg.	....
Mephobarbital	....	....	8.0 mg.
Dextrose (9.4 cal.)	....	....	2.5 mg.
Vitamin A	5000 I.U.	5000 I.U.	1000 I.U.
Vitamin D	1200 I.U.	1200 I.U.	100 I.U.
Vitamin B-1	3 mg.	3 mg.	0.5 mg.
Vitamin B-2	3 mg.	3 mg.	0.5 mg.
Vitamin B-6	1 mg.	1 mg.	0.15 mg.
Vitamin C	100 mg.	100 mg.	15 mg.
Vitamin E	1 I.U.	1 I.U.	....
Niacinamide	20 mg.	20 mg.	3 mg.
Calcium Pantothenate	2 mg.	2 mg.	0.3 mg.

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Minnesota Blue Shield

When the House of Delegates of the Minnesota State Medical Association adopted the California Relative Value Scale at its 1961 meeting, the nationwide, non-governmental service principles of Blue Shield got a new breath of life at a critical time.

The Delegates' action has been followed closely by the successful negotiation between Minnesota Blue Shield and the automotive industries. The negotiations produced new prepayment contracts called the "M-Series." These contracts have been adopted by General Motors and the Ford Motor Company.

Blue Shield has sent a letter to all participating physicians in Minnesota outlining the new benefits and the new fee schedules of the M-Series Contracts. Employees of automotive plants have signed application cards for coverage, effective January 1.

Twenty-five hundred employees are involved in the new contract signing.

Mr. Thomas Paton, Executive Director of Minnesota Medical Service, Inc. described the House of Delegates decision a "significant move by the medical profession and industry in Minnesota to honor the voluntary principles of Blue Shield on a nationwide basis."

By increasing income ceiling limits from $5000 to $7500 for active employees and their families, and from $3600 to $4200 for retirees, Blue Shield has been able to design new contracts that not only provide subscribers with broader service benefits, but also modernize fee schedules proportionate to increases in workers' earnings.

Under the old contracts, which Paton describes as "adequate in their time," subscribers to Blue Shield were ineligible for service benefits if their incomes exceeded $5000 a year. The new M-Series Contract provides service benefits for families earning up to $7500.

Furthermore, a subscriber who becomes a patient under the Auto Contract will now receive up to 365 days of in-hospital medical care. Formerly, the limit was 180 days.

By utilizing the California Relative Value Scale, Minnesota Medical Service, Inc., has been able to provide correspondingly larger and more realistic fees for physicians' and surgeons' services.

The new M-Series Contracts also include liberalizations of diagnostic laboratory and X-ray benefits.

"At a time when much pressure and publicity is being brought for increased government influence in the health field," said Paton, "a program has been designed by Blue Shield which maintains the integrity of the medical profession, the soundness of industrial investment, and the security of the patient."

Paton also said he believed that the Minnesota State Medical Association had not only given prepayment a much needed transfusion but had also set into motion a nationwide movement for better coverage on the local community basis. "We cannot afford to overlook the community base," he said, "on which fair and reasonable rates for medical-surgical coverage must be determined."

The contracts covering retirees of the auto plants are effective as of February 1. Their coverage calls for 50-50 contribution by retiree and employer. Those retirees who did not sign up before are being given an opportunity to sign for coverage, effective April 1.

In addition to mailing letters of explanation to all participating physicians, Blue Shield will soon distribute printed brochures that outline in detail benefits, rates, and limitations of each contract in the new M-Series.

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. . . Paid more than $70 million in claims for medical-surgical-obstetrical services.

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Board of Medical Examiners

SOUTH ST. PAUL FARMER SENTENCED FOR ABORTION

Re: State of Minnesota vs. Malcolm A. Leitch

On January 11th, 1962, Malcolm A. Leitch, 46, Route No. 1, South St. Paul, Minnesota, was sentenced by the Hon. John A. Weeks, Judge of the District Court of Hennepin County, to a term of not to exceed eight years in the State Prison at Stillwater for the crime of abortion. However, Judge Weeks stayed the execution of the sentence and placed the defendant on probation for a period of five years. The four-year maximum sentence for abortion as provided for by law was doubled by the Court in this case due to the fact that on January 10th, 1962, Leitch had entered a plea of guilty to an information which charged him with having a prior conviction for a felony. The defendant had pleaded guilty to the abortion charge before Judge Weeks on December 7th, 1961, at which time a presentence investigation was ordered by the Court.

The case involving the defendant came to the attention of the authorities after a complaint was made to the police that a 32-year-old Minneapolis woman, who had been receiving public assistance for her four children because her husband was confined to a mental institution, had been hospitalized at a Minneapolis hospital suffering from the after-effects of a criminal abortion. The investigation by the Minnesota State Board of Medical Examiners and the Minneapolis Police Department disclosed that the person responsible for the woman's pregnancy was acquainted with the defendant due to the fact that at one time both of them had worked in the same drug store at Brainerd, Minnesota. According to the woman's statement, she paid Leitch the sum of $50.00 for performing the abortion by means of a catheter. When the defendant was asked to state his occupation, he replied: "Part-time cemetery salesman, farmer, voluntary fireman, rescue squad."

On May 15th, 1957, the defendant was previously sentenced to a two-year probationary term by the Hon. Ronald E. Hachey, Judge of the District Court of Ramsey County, for the crime of attempted abortion. Leitch, who lives on a farm with his family near South St. Paul, graduated from Johnson High School in St. Paul and he also attended the University of Minnesota but did not complete his course. He holds no license to practice any form of healing in the State of Minnesota.

MINNEAPOLIS WOMAN SENTENCED TO SERVE ONE YEAR FOR ABORTION

Re: State of Minnesota vs. Martha June Nordgren

On December 18th, 1961, Martha June Nordgren, 30, 3000 Newton Ave. N., Minneapolis, was sentenced by the Hon. Levi Hall, Judge of the District Court of Hennepin County, to serve a term of one year in the Hennepin County Women's Detention Home for the crime of abortion. However, the execution of the sentence was stayed by the Court until after Christmas and the defendant was ordered to surrender to the Hennepin County Sheriff on December 27th, 1961, in order to begin serving her sentence. Mrs. Nordgren had previously on November 14th, 1961, entered a plea of guilty before Judge Hall to an information charging her with the crime of abortion.

The defendant's case came to the attention of the authorities after a 27 year-old Minneapolis divorcee had been hospitalized in that city suffering from the after-effects of an induced abortion. A written statement was taken from the victim which disclosed that Mrs. Nordgren had made two attempts to abort her by means of inserting a catheter, the last occasion being on October 28th, 1961. Although both the defendant and the patient contended that no fee had been paid for the abortion except for the gift of several record albums, the evidence indicated that Mrs. Nordgren had received $300 for performing an abortion for the same individual within the past two years.

The defendant, who was born on March 6th, 1931, was employed as a waitress in a downtown Minneapolis cafe. Although Mrs. Nordgren admitted that she had aborted herself during the past five years she denied that she had performed an abortion upon another person, except for the patient in this case. The defendant also admitted that she has never had any type of medical training and that she holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secy.

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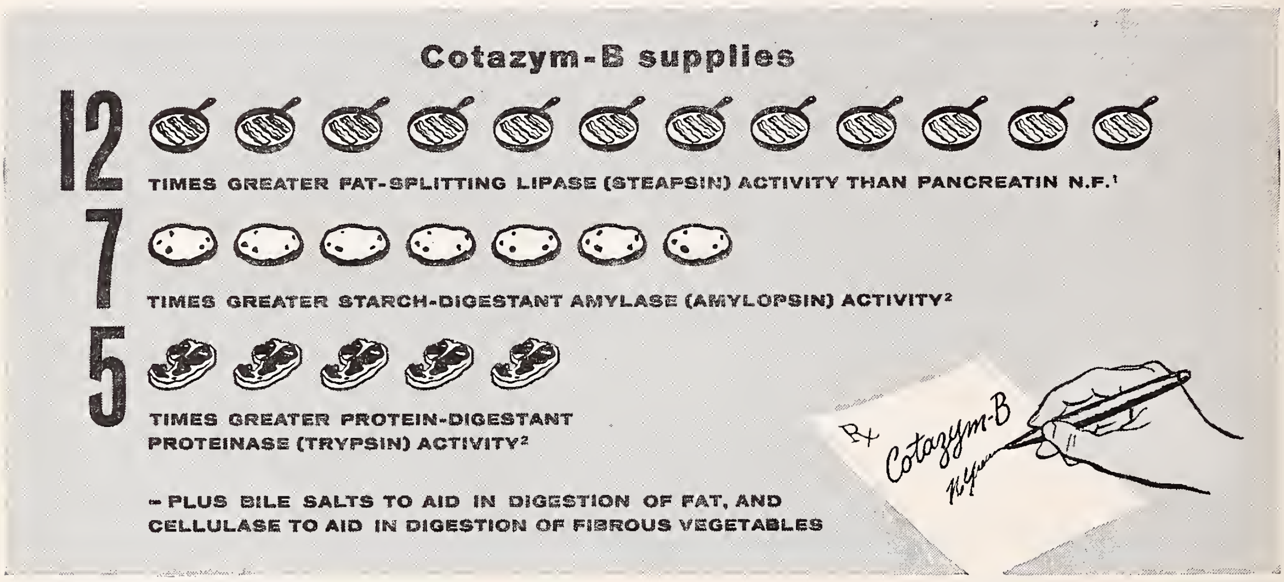

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Dosage: 1 or 2 tablets with water just before each meal.

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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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In Memoriam

EARL A. LOOMIS

Dr. Earl A. Loomis, 81, retired eye, ear, nose and throat specialist, died January 24, at the Minnesota Masonic Home, after a prolonged illness. He was born in Wells, Minnesota, and obtained his degree in medicine at the University of Minnesota Medical School.

Dr. Loomis was a member of the Sons of the American Revolution, the Six O'Clock Club and Zuhrah Temple of the Shrine. He was a 50 Club and life member of the Minnesota State Medical Association, a member of the Hennepin County Medical Society, the American Medical Association, the American Academy of Ophthalmology and Otolaryngology, and the American College of Surgeons.

He is survived by his daughter, and three sons, Doctor George Loomis of Winona and Doctors Donald Loomis and Earl Loomis, Jr., of New York.

JAN SEKANINA

Dr. Jan Sekanina, 51, general practitioner in Babbitt, died December 10. He was born in Czechoslovakia and obtained his medical degree at the Charles and Masaryk Universities in Prague. Dr. Sekanina before going to Babbitt practiced medicine in Czechoslovakia, Germany, East Africa and Liberia.

He was a member of the Range Medical Society, the Minnesota State Medical Association and the American Medical Association.

He is survived by his wife.

ADAM ROY BLAKEY

Dr. Adam Roy Blakey, 79, retired general practitioner in Osakis, died December 30 at the Knute Nelson Home in Alexandria, after a prolonged illness. He was born in Racine County, Wisconsin, and obtained his degree in medicine at the Rush Medical College in Chicago.

Dr. Blakey was an honorary member of the American Legion Post of Osakis, and a member of the Park Region Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife and son.

ROY N. ANDREWS

Dr. Roy N. Andrews, 77, Mankato pediatrician for 53 years, died December 8, after an illness of about one year. He was born in Mankato and obtained his degree in medicine at the University of Minnesota Medical School. He went on to post graduate work in obstetrics and pediatrics at the Lying In Hospital in New York. Dr. Andrews and his father were among the charter members who founded the Mankato Clinic, and was active on the staff of the clinic until he reached the age of 65 and then continued on as a doctor for the clinic until 1959. For the past two years he has been associated with Doctors Robert B. Engstrom and Wallace E. Mathews.

Dr. Andrews was Blue Earth county coroner until this year and was a member of the American Academy of Pediatrics, Blue Earth County Medical Society, a life member of the Minnesota State Medical Association and the American Medical Association.

He is survived by his wife and two daughters.

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases “Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease.”[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis “It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . .”[3]

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases “Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult.”[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported In: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] “Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes.”[9]

8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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Meetings and Announcements

MARCH

Orthopedic and Rehabilitation Seminar Meeting, March 31, Younker Memorial Rehabilitation Center, Des Moines, Iowa. Contact: Dr. William D. deGravelles, Jr., Iowa Methodist Hospital, Des Moines.

Crippled Children Services Mid-Winter and Spring Field Clinics as follows: March 27-28, St. Cloud; March 28-29, Hibbing; March 28, Faribault; April 10-11, Brainerd; April 11, Crookston; April 12, Albert Lea; April 24-25, Thief River Falls; April 25, Gaylord and Detroit Lakes; April 26, Worthington; May 17, International Falls. Contact: Department of Public Welfare, St. Paul.

Ramsey County Medical Society and the St. Paul Chamber of Commerce will hold a panel discussion at the next monthly meeting of the society, March 26, 15th Floor Auditorium, Lowry Medical Arts Bldg., St. Paul.

Mayo Clinic and Mayo Foundation clinical review March 26-28, on general medicine and surgery. Contact: M. G. Brataas, Mayo Clinic. Program will be repeated April 2-4.

Medical College of Georgia "Pre and Postoperative Care" Course, March 20-22, at the college. Contact: Dr. Claude-Starr Wright, Medical College of Georgia.

APRIL

West Virginia Academy of Ophthalmology and Otolaryngology Meeting, April 23-25 Greenbrier Hotel, White Sulphur Springs, West Virginia. Contact: Dr. Worthy W. McKinney, 109 E. Main Street, Veckley, West Virginia.

American College of Surgeons Meeting, April 16-18, Sheraton-Park Hotel, Washington, D. C. Contact: College, Chicago.

American College of Allergists Graduate Course and Congress, April 1-6, Hotel Radisson, Minneapolis. Contact: John D. Gillaspie, 2141 14th St., Boulder, Colorado.

University of Illinois College of Medicine Postgraduate Course in Laryngology and Bronchoesophagology April 2-14. Contact University, 1853 West Polk Street Chicago.

American College of Physicians 43rd Annual Session in Philadelphia, April 9-13. Contact: Truman G. Schnabel, Jr., M.D., Philadelphia.

Medical Library Association Training Courses: April 5-June 7, Drexel Institute, Philadelphia.

American Academy of General Practice, Las Vegas, Nevada Meeting April 6-13. Contact: Mr. Mac Cahal, Volker Blvd. at Brookside, Kansas City, Missouri.

American Academy of Pediatrics Spring Session, Statler-Hilton, Los Angeles, April 22-24. Contact: E. H. Christopherson, M.D., A.A.P., 1801 Hinman Avenue, Evanston, Illinois.

Chicago Committee on Trauma of the American College of Surgeons Course on Fractures and Other Trauma, April 25-28 at John B. Murphy Memorial Auditorium, Chicago. Contact: Dr. Fahey, 1791 West Howard, Chicago.

Third Midwestern Sectional Meeting of Biological Photographic Assn. Des Moines, Iowa, April 6-8, Downtown Motor Inn. Contact: Dorothy Pinkham, 551 West Grant Place, Chicago.

Western Safety Congress and Exhibits, April 17-19, Ambassador Hotel, Los Angeles. Contact: Joseph Kaplan, Greater Los Angeles Chapter National Safety Council, Los Angeles.

MAY

Minnesota State Medical Association 109 Annual Meeting, Minneapolis Auditorium, May 21-23. Contact: Harold Brunn, Exec. Secy.

American Rhinologic Society Course on "Expanded Surgery of Nasal Septum" at St. Michael Hospital, Milwaukee, May 16-19. Contact: Rhinologic Society, Chicago.

New York University Schools of Medicine, Dept. of Dermatology holding Fourth Annual Howard Fox Memorial Lecture, May 8, Alumni Hall. Contact: David G. Leo, Medical Center.

ANNOUNCEMENTS

Six fellowships for residents in Ophthalmology to be awarded by Guild of Prescription Opticians of America July 1. Application must be received by May 15. Write: Fellowships, Guild of Prescription Opticians of America, 110 E. 23rd St., New York City.

Southern Medical Association, Section of Ophthalmology and Otolaryngology will accept papers to be considered for presentation at the Miami Beach annual meeting, Nov. 12-15, until May 15. Contact: Dr. Albert Esposito, First Huntington National Bank Bldg., Huntington, West Virginia.

Committee on scientific exhibits for the June meeting of Minnesota State Medical Society is desirous of receiving applications from persons or organizations interested in making an exhibit. Contact: Lyle J. Hay, M.D., 714 9th Avenue South, Minneapolis.

Next scheduled examination (Part II), oral and clinical, for all candidates will be conducted at the Edgewater Beach Hotel, Chicago April 9-14. Contact: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota; Otolaryngology for Physicians, April 12-14; Internal Medicine April 16-18; Surgery April 26-28; Gynecology April 30-May 2; May 7-9 Ophthalmology; Proctology for General Physicians May 14-18; Psychiatry May 31-June 2.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

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Physician's Diary

Dr. Cecil J. Watson, professor and head of the department of medicine at the University of Minnesota, will deliver the annual Thomas Young Memorial lecture February 15, at St. George's hospital, London, England. He will also receive the honorary degree of doctor of medicine honoris causa from the Johannes Gutenburg university, Meinz, Germany.

* * *

Dr. Francis W. Lynch, St. Paul, was named chairman of the Honorary Appointments, and **Dr. Robert R. Kierland,** Rochester, was named chairman of Registration for the XII International Congress of Dermatology which will take place in Washington, D. C. September 9 to 15.

* * *

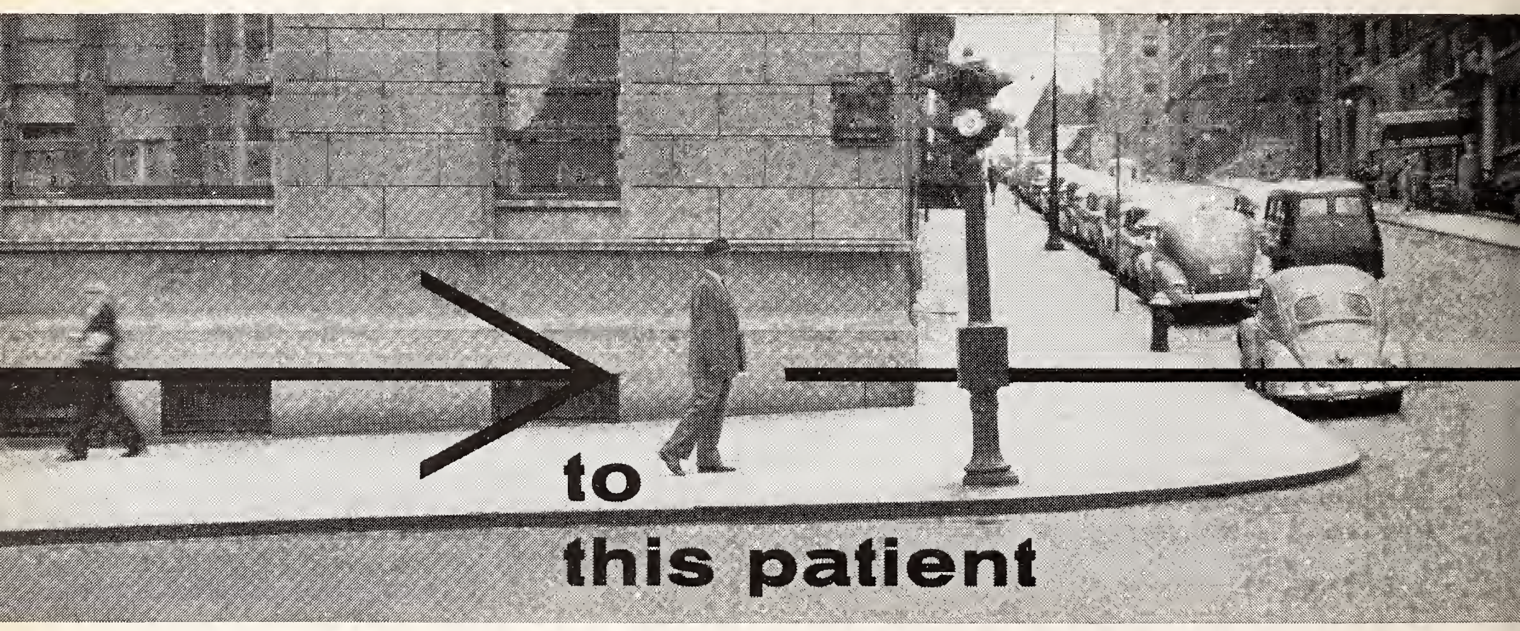
Dr. C. W. Jacobson of Breckenridge was elected President of the Medical Staff of St. Francis Hospital.

* * *

Mayo Clinic announced the appointment of seven new consultants: **Drs. Emilo R. Guiliana, Bruce A. Kottle, Donald D. Layton, Jr., Douglas B. McGill, W. Spencer Payne, Charles M. Reeve, and Bryon L. Riggs.**

* * *

Dr. J. R. Doyle was elected new president of the Olmsted Medical Group at its annual meeting. **Dr. John Brodhun** was elected vice president and **Dr. L. T. Wood,** secretary-treasurer.



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Dr. G. M. Ruggles of Forest Lake has been named chief of the medical staff of the new Memorial Hospital. Other members of the active staff are: **Drs. G. T. Midboe, C. F. Peikert,** and **J. L. Purdie. Dr. J. A. Poirier** has been named to the honorary staff.

* * *

Dr. H. B. Roholt has left Fosston to serve on the residency staff of the St. Luke's hospital, where he will be specializing in internal medicine.

* * *

Dr. Richard Varco, professor of surgery at the University of Minnesota, was guest speaker at the Steele County University of Minnesota Alumni Club meeting recently.

* * *

Dr. Ellen Fifer recently was appointed public health officer for Richfield, Bloomington and St. Louis Park.

* * *

Dr. A. J. Floersch was elected president and chief of staff of the Owatonna City hospital medical staff at its staff meeting. **Dr. R. W. DeWerd** was elected vice president and **Dr. J. E. McEnaney** was re-elected secretary.

* * *

The Mayo Clinic board of governors has re-elected its officers for the coming year. **Dr. J. T. Priestly** was named to his sixth term as chairman. **Dr. C. A. Good** is vice chairman and named to the personnel committee were: **Dr. J. M. Stickney, Dr. O. H. Beahrs, Dr. J. W. DuShane, Dr. L. E. Ward,** with **Dr. Victor Johnson** ex-officio. **Dr. Eric E. Wollaeger,** head of a section of medicine, was elected president of the staff of the Mayo Clinic.

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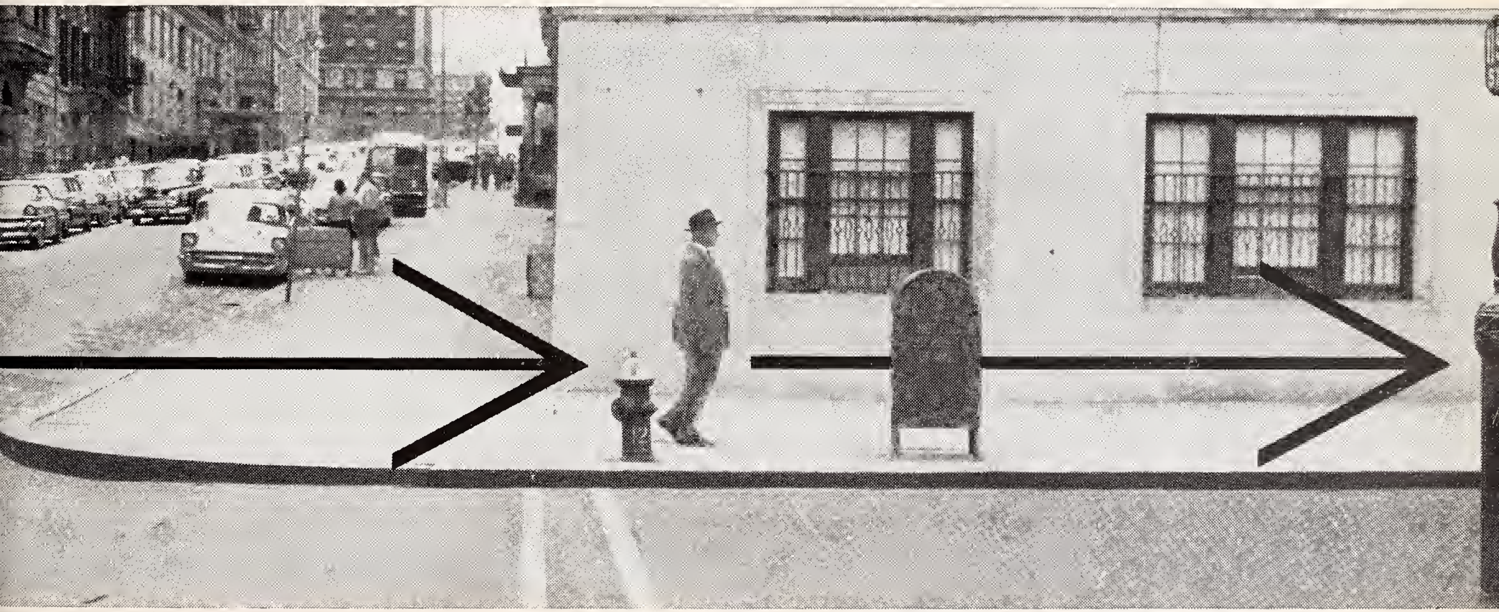

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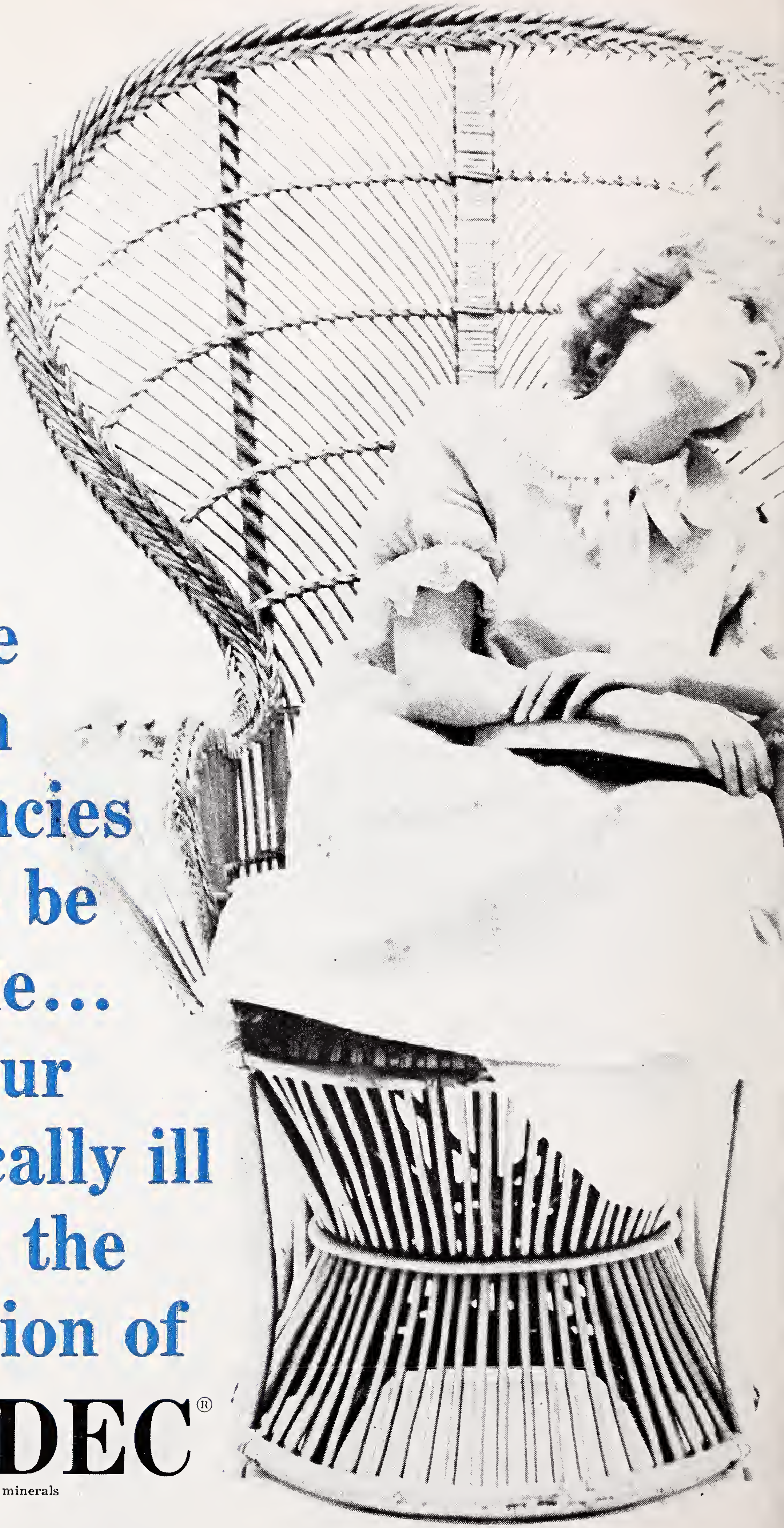

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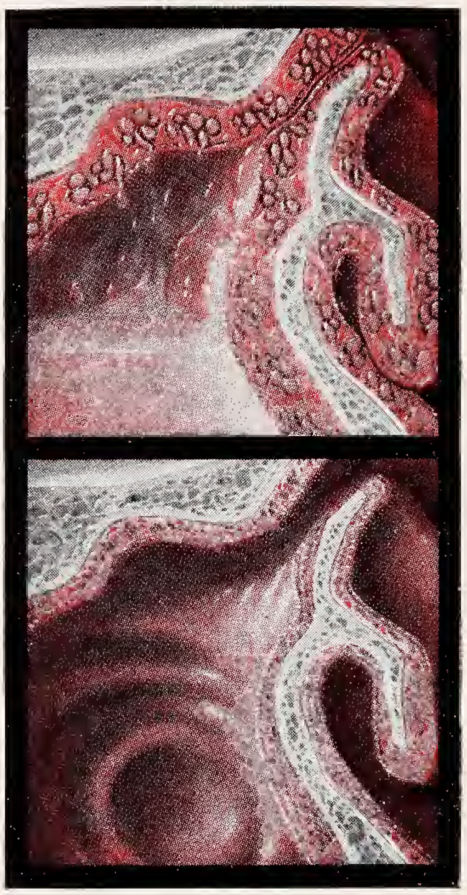

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1. Grant, L. E.: Coryza and nasal sinus infections, Clin. Med. & Surg. 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, Journal-Lancet 79:535, Dec., 1959.

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President's Letter

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Gentlemen:

I wish to invite you to attend the annual meeting of your Minnesota State Medical Association, in Minneapolis, from May 21 through 23. You may rest assured that the meeting will prove to be profitable as well as enjoyable.

The Committee on Scientific Assembly has made a number of innovations which will increase the value of the scientific sessions. Each of the sessions will be in the form of a symposium, usually with three 15-minute presentations followed by a question-and-answer period. Topics selected are of broad interest; no day in any practitioner's experience will pass without his application of the items on this program. The discussion and the answers to written questions after each triad of presentations will afford ample opportunity for the elucidation of specific points and problems.

The above-mentioned change reflects a major departure from the special lectureship heretofore prominently featured. Although many of these have been delightful presentations, some have been of interest primarily to limited segments of our membership; often the longer presentations have proved unduly esoteric. Arrangements for the new symposia have been facilitated by the participation of eminent men from several Midwestern medical centers. This feature lends added interest, as we hear from those whom we know. The Monday morning scientific session will start at 10:00 a.m., which is late enough to enable those driving to Minneapolis or making early rounds to be in attendance as this session opens.

Several innovations in the format of the annual meeting were implemented last year. For example, banquet activities were transferred to the agenda of the House of Delegates. We may now increase the entertainment provided at the banquet program. Several features heretofore presented on Monday evening may now be enjoyed Tuesday at the banquet. The Committee on Scientific Assembly has considered the banquet to be a time primarily for honoring certain members of our association and for conviviality, rather than an occasion demanding a message. There will be an evening of entertainment followed by dancing.

Another innovation is the "fireside conference," which is to be held on Monday evening. This feature has been a popular one at several medical meetings during the past year. It will be conducted by the Minnesota Chapter of the American College of Chest Physicians. There will be, simultaneously, a series of round-table panel discussions informally considering various facets of cardiac and pulmonary disease. Bring your unusual problems and your films and electrocardiograms, and "stump the experts." Light libations and pretzels will be served, it is said, as you pass at your leisure from group to group.

The Committee on Local Arrangements and the Committee on Scientific Assembly, as well as many others, have worked ceaselessly to bring you an attractive program. Much of the format of our annual session will be new, yet it will be eminently suited to the needs of the busy physician. Study the program and you will see its merit. Arrange to spend some time at the annual session of your Minnesota State Medical Association. You will enjoy it.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association

A CASE FOR HALDRONE®

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Haldrone is highly effective in suppressing the manifestations of HAY FEVER and pollen allergies, even when administered in low dosage. (Haldrone is approximately nine times as potent as hydrocortisone in ACTH suppression tests in man.[1]) With average dosage, only minimal changes occur in regard to sodium retention or potassium excretion. Haldrone is comparatively economical for your patients, too.

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[1] Accumulated reports from thirty-six clinical investigators: Lilly Research Laboratories.

The Board of Editors of the Minnesota State Medical Association is happy to announce the establishment of an annual award for the best scientific manuscript published in MINNESOTA MEDICINE for the preceding year.

The winner of the first such award has been chosen for 1961. A plaque will be given to the authors at the 109th Annual Meeting of the Association in Minneapolis, May 21, 22, 23.

In reviewing all of the manuscripts, the awards committee of the editorial board was hard pressed to determine a single winner as it appeared that there were many scientific manuscripts worthy of serious consideration. In practcally all of the monthly issues one or more worthy manuscripts were found.

The list of authors included men from many of the large medical centers in the United States. To that extent, seven other manuscripts were found to be consistently and repeatedly mentioned as candidates for the first award. The authors of these seven manuscripts will be given certificates of meritorius writing.

In a rating of state medical journals for the past few years, MINNESOTA MEDICINE has ranked high in the quality of its scientific material, its art, its style, and its appeal.

We are proud to announce the co-authors, the winners of the first *MINNESOTA MEDICINE AWARD.*

Floyd D. MacLean, M. D.
Robert S. Flom, M. D.
Donald H. Peterson, M. D.

for their manuscript

Diagnosis and Treatment of Arterial Injuries

which appeared in the April, 1961 (Volume 44, Number 4) issue of MINNESOTA MEDICINE. A plaque in bronze will be awarded to each of these authors.

You will be proud to recognize these men as our colleaques.

Board of Editors

The authors present an excellent and successful series of liver biopsies using a new and useful technique. The procedure probably can be expanded for use in many hospitals and could prove highly useful in many difficult diagnostic biliary cases. All practicing physicians could benefit from this interesting study.

Two Operator Needle Biopsy of the Liver

Experience with the Menghini Technique *

D. F. JOHNSON, M.D.
L. W. ETCHART, M.D.
D. R. SLETTE, M.D.
F. W. HOFFBAUER, M.D.†
Minneapolis, Minnesota

Needle biopsy of the liver has found an increasing acceptance as a useful diagnostic procedure since 1939 when Roholm and Iverson[1] first described its use in patients ill with viral hepatitis. In the ensuing years a variety of techniques and needles have been employed by various investigators throughout the world. Despite careful selection of patients, needle biopsy of the liver does entail a slight risk. In a 1952 review, Terry[2] noted a mortality rate of 0.12% and an incidence of major complications of 0.32% in 10,000 reported biopsies. The following year, Zamcheck and Klausenstock[3] indicated a true mortality of one per thousand in 20,000 reported biopsies.

In 1957 Giorgio Menghini of Perugia, Italy, described an improved technique that further reduced the risk of needle biopsy and yet produced a specimen adequate for diagnostic purposes.[4] In a subsequent paper published in the American literature,[5] Menghini modified his original technique. He referred to this maneuver as the "two operator one second liver biopsy technique;" the thin needle used to secure a biopsy by aspiration penetrated the substance of the liver and was withdrawn in a quick motion. Early in 1960 we undertook an evaluation of this method on the Medical Service of the Minneapolis General Hospital. The results to date have been satisfactory. Our experience with 66 biopsies performed on 60 patients in a 14 month period is described in the following report.

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*Supported, in part, by a contract with The Office of the Surgeon General (DA-49-007-MD-592) and the University of Minnesota.

†From the Minneapolis General Hospital, Minneapolis, Minn. Presented at the Spring Meeting, Minnesota Society of Internal Medicine, Minneapolis, May 20, 1961.

Contraindications

We have followed the recommendations of Schiff and Gall[6] in the selection of patients. Biopsies have not been attempted in patients whose prothrombin time was greater than 18 seconds (control 12-13 seconds). Patients exhibiting significant nitrogen retention (blood urea nitrogen value over 30 mg. per 100 ml.) have not been biopsied. The presence of high grade extrahepatic biliary obstructions or the presence of any type of a blood dyscrasia has been regarded as a contra-indication to liver biopsy. For technical reasons, massive ascites has been deemed a contraindication because the liver tends to be pushed away by the needle and one seldom obtains a satisfactory specimen of tissue.

The instrument commonly employed in this country for liver biopsy, the Silverman needle, is a 14 gauge needle, i.e., approximately 2.0 mm. in diameter. The needle advocated by Menghini* is only 1.22 mm. in thickness, comparable to a 20 gauge needle. The point of the needle has been ground in a special fashion in order to facilitate the entrance of a core of tissue into its lumen. The wall of the needle is extremely thin (0.1 mm.) so that the lumen is relatively large in comparison to the outside diameter. To prevent a tissue specimen from being aspirated into the tubing or syringe of the set-up, a short, loose fitting stylet termed a "stopping plug" or a "nail" is inserted in the hub of the needle. The instrument as employed then consists of the above-described needle, the short, loose fitting stylet, a length of thick-walled rubber tubing and a 5 or 10 ml. syringe, as shown in Fig. 1. The material is sterilized, by autoclaving, as a unit. When ready for use the syringe is filled with sterile saline solution and the air is expressed from the system by filling tubing and needle with saline.

Technique

The liver biopsy is made through an intercostal approach just as with the larger and thicker Silverman, Terry or Roholm needles. The preferred site is the ninth intercostal space in the anterior or midaxillary line. The skin area is prepared with a suitable antiseptic solution and the field draped with sterile towels. Two ml. of a local anesthetic agent are injected to anesthetize the skin and subcutaneous tissues. An additional 1 or 2 ml. of procaine solution is infiltrated in the intercostal muscles and, if possible, the pleura. A small skin puncture is made in the skin and the biopsy needle introduced approximately one or two cm. beneath the skin. One cc. of saline solution is then expelled from the system in order to clear any tissue that may have entered the tip of the needle. The assistant then withdraws the plunger of the syringe and produces, by suction, a negative pressure in the system. The patient is then instructed to exhale completely and hold his breath. With a rapid motion the needle is plunged into the liver and withdrawn in a period of one second (Fig. 2). The patient is then allowed to breathe. The needle is removed from the tubing, the "nail" stylet withdrawn; the small core of liver tissue is pushed out of the needle by a wire stylet into a solution of formalin or other tissue fixative. When successful, the biopsy specimen usually measures two or 3 cm. in length. Although the biopsy is slightly thinner than specimens obtained with the Silverman needle, it is still adequate for pathologic interpretation.

Results

Menghini has emphasized "the object of liver biopsy is not the greatest possible amount of tissue but an amount strictly enough for diagnosis and with the least risk possible."[5] The short time the aspiration needle is in the substance of the liver, one second as compared with 7 or 8 seconds with the Silverman needle, is an advantage in reducing the risk of a capsular tear. Menghini has not encountered a serious mishap in 2000 liver biopsies performed by his technique, either by himself or by individuals without previous experience.[5] The failure to obtain an adequate tissue specimen in 4 of the 60 patients here reported (Table I) may be a manifestation of a lack of previous experience. Only one of the present authors was familiar with previous liver biopsy techniques when the study began.

Needle biopsies by the above-described technique have been performed in the ward treatment room; patients have then been transported back to their beds. They are told to lie on their right side for one hour and to remain in bed for 24 hours. Blood pressure and pulse rates are checked at frequent intervals during the ensuing 24 hours. Despite our instructions, an occasional patient has been uncooperative and has gotten up out of bed within two hours of the biopsy time. So far, no untoward incidents have been noted as a result of this infraction of the rules. We have not encoun-

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*Available from a surgical supply firm (Societa Italiano "ICO" S.p.A., Piazza Galileo 6, Bologna) in Italy.

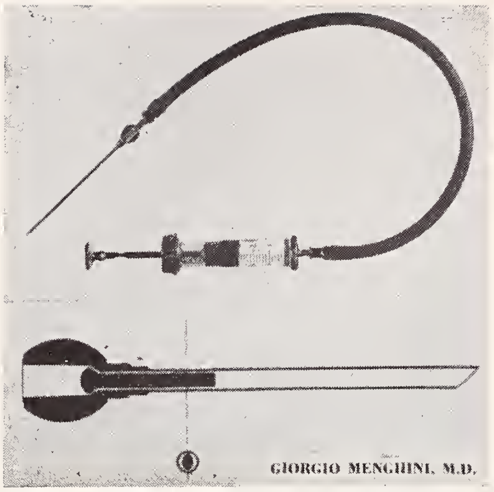

Figure 1. Upper: Complete instrument, ready for biopsy.

Lower: Longitudinal section of the needle; note that the stopping plug in cross section is oval. (Reproduced from Menghini, G., Two-Operator Needle Biopsy of the Liver, Amer. J. Dig. Diseases, 4:682-692 (Sept.) 1959, by permission of the author and the editor.)

tered evidences of intraperitoneal hemorrhage following liver puncture with the thin Menghini needle. There have been no instances of serious blood pressure decline nor drop in hemoglobin levels. Of the 60 patients observed in this preliminary report, seven had mild pain following the procedure. These were successfully treated with aspirin (3 instances), codeine (2 instances), and a single injection of 50 mg. Demerol® (2 instances.) The pathologic diagnoses submitted on the liver biopsy specimens are presented in Table I.

From the standpoint of the pathologist who is required to interpret the sections, the biopsy specimen obtained by the Menghini needle can be said to be relatively satisfactory. When the consistency of the liver is normal as in fatty liver, viral hepatitis, and similar conditions, the specimen is quite adequate and compares favorably with those obtained by previous methods. In the presence of cirrhosis, particularly when the disease is advanced and the liver is quite fibrotic, the thin needle biopsy specimen invariably fragments into small segments. This drawback appears to be an inherent feature of the aspiration technique. Multiple punctures of cirrhotic livers were made at the autopsy table; invariably these specimens fragmented. This phenomenon probably reflects a fundamental feature of cirrhosis. The fibrous tissue, so prominent in this pathological condition, is derived from the original supporting structure of the liver that has been pushed and compressed by the isolated units of regenerating liver parenchyma. This fibrous tissue is not firmly adherent to the adjacent cell masses as it would be if an overgrowth of fibrous tissue had actually occurred. Were this not so, one would anticipate that the fibrous trabeculae in cirrhosis would adhere firmly to the nodules of liver cells and the biopsy specimen would remain intact. Pathologists may disagree with this explanation but the fact remains that biopsies of the cirrhotic liver secured with the Menghini needle do break up into small fragments. This inherent drawback must be realized and accepted. One microscopical examination a fairly accurate interpretation of the fragments can usually be made.

Summary and Conclusions

The one second two operator liver biopsy procedure as described by Menghini in 1959 has been

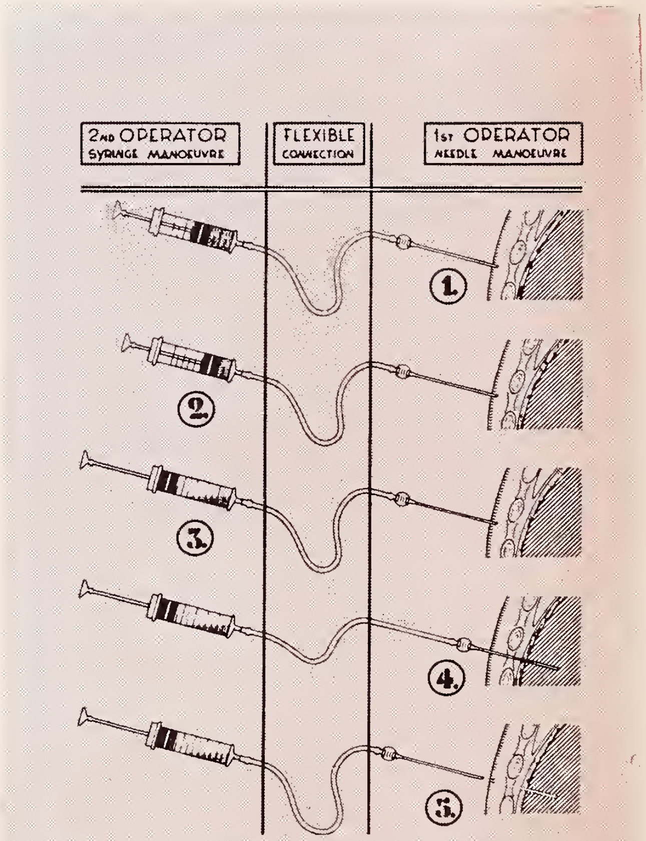

Figure 2. Schematic diagram of the successive steps (numbered chronologically) of the biopsy. Note successive positions of the first and second operators (operator and assistant). (Reproduced from Menghini, G., Am. J. Dig. Diseases, 4:682, 1959, by permission of the author and editor.)

Table I

Pathological Findings Reported in 60 Liver Biopsies

Fatty Liver	16
Cirrhosis (Fatty)	13
Cirrhosis (Non-Fatty)	5
Normal Liver	12
Non-Specific Inflammation	6
Hepatitis, Viral	3
Hepatoma	1
Specimen Inadequate	4
	60

evaluated. The thin aspirating needle, 1.2 mm. in thickness, has been employed in 60 patients on a general medical service. No major complications occurred in this small series of patients and the incidence of post-biopsy pain or discomfort was minimal.

When the consistency of the liver is normal, satisfactory pathologic specimens are obtained. When the liver is extensively distorted by compressed fibrous tissue, as it is in cirrhosis, the needle biopsy specimen usually breaks into small fragments.

Addendum

In the ensuing six months since these data were compiled an additional 59 liver biopsies have been performed. The results have been satisfactory though one possible complication was encountered in the total of 121 patients. Grossly bloody ascitic fluid was encountered at autopsy in a patient with metastatic carcinoma of the liver. A needle biopsy of the liver had been performed, successfully and with no apparent post-biopsy difficulty, 7 days before death. Since no other obvious cause for the intraperitoneal bleeding could be found, it is possible that bleeding did occur at the biopsy site. The latter was identified as a small puncture wound in the liver; no laceration of the capsule was evident. The pathologist could not express blood from the puncture wound. Our experience to date has therefore been comparable to the series of 122 patients reported by Parets et al (Am. J. Digest. Dis. 4:693, 1959). They encountered one complication, biliary perintonitis, in a patient with carcinomatous involvement of the liver.

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SECURITY

You cannot bring about prosperity by discouraging thrift. You cannot strengthen the weak by weakening the strong. You cannot help the earner by pulling down the wage payer. You cannot further the brotherhood of man by encouraging class hatred. You cannot help the poor by discouraging the rich. You cannot establish sound security on borrowed money. You cannot keep out of trouble by spending more than you earn. You cannot build character and courage by taking away man's initiative and independence. You cannot help men permanently by doing for them what they could and should do for themselves.

Abraham Lincoln

The Cyanmethemoglobin

DONALD S. AMATUZIO, M. D.*
FRANCISCO GRANDE, M. D.*
SHOHACHI WADA, Ph. D.*
Minneapolis, Minnesota

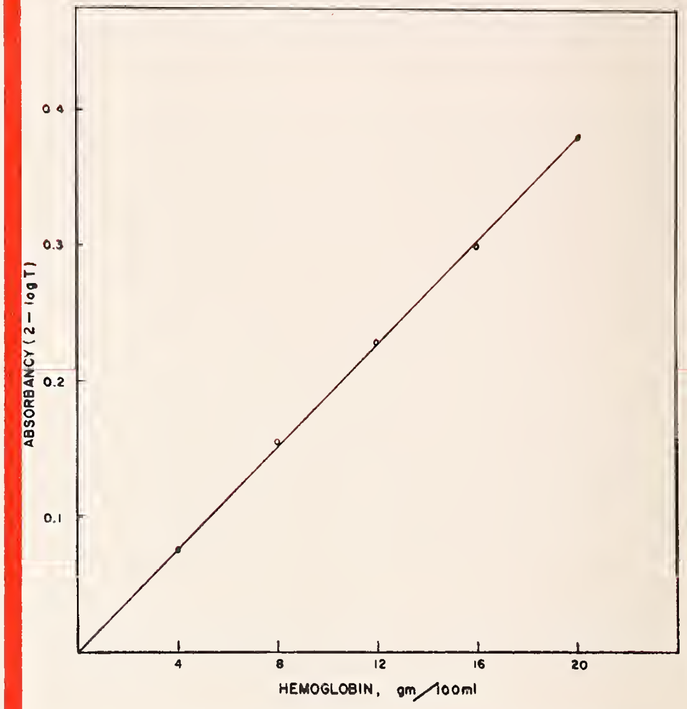

Figure 1. The Concentration versus Absorbancy at 540 mu. and 27.1° C.

Hemoglobin determinations are one of the doctor's most valuable laboratory procedures. However, standardization has always been a problem. The following article tells of an easy method of preparing standards for the cyanmethemoglobin method using easily obtainable animal hemin.

One of the most frequently performed blood tests in clinical medicine, and yet lacking in uniformity, is the hemoglobin determination. Most methods for hemoglobin estimation are not satisfactory because of lack of stability, of reproducibility and of an available reference standard. The cyanmethemoglobin method has been shown to be a more precise procedure for hemoglobin determination than either alkaline hemin or the carboxy hemoglobin procedures[1]. The advantages of the cyanmethemoglobin method are that a stable hemoglobin pigment is formed and that a stable reference standard can be prepared.

Materials and Methods

The **diluent** used for hemoglobin estimation is a potassium ferricyanide-cyanide solution as prepared by Drabkin[2]. This solution is prepared by dissolving 1.0 gram of sodium bicarbonate, 50 milligrams of potassium cyanide (0.8mM.), and 200 milligrams of potassium ferricyanide

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*Supported by the John A. Hartford Foundation Grant.

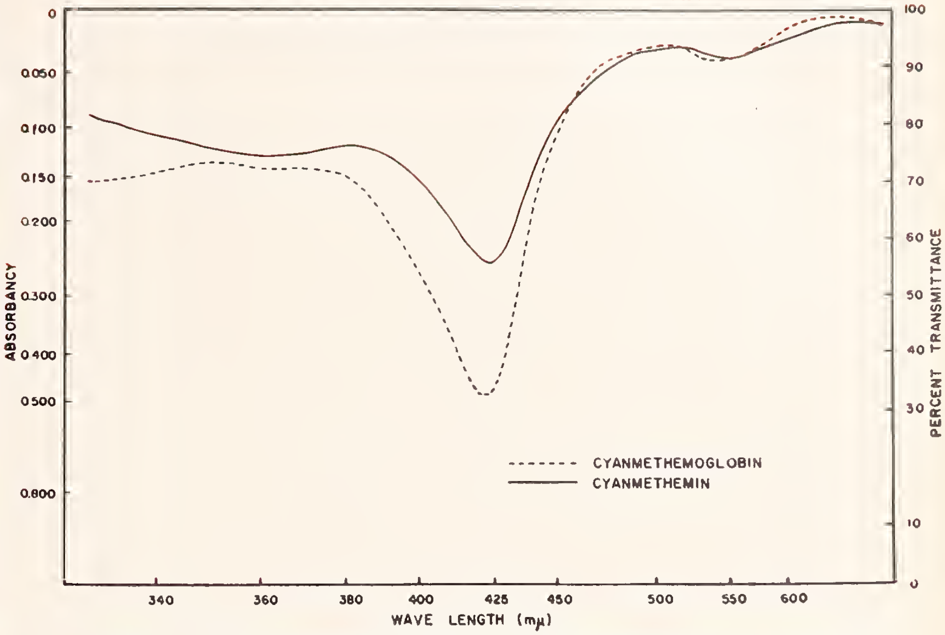

Figure 2. The Absorption Spectra of Cyanmethemins from Hemin (animal) and Hemoglobin (man) measured at 24.5° C.

Method for Hemoglobin Determination

(0.6mM) in distilled water and diluting to one liter. The solution is kept in a brown bottle.

The cyanmethemoglobin **standard solution** is prepared by the reaction of hemin with potassium cyanide. Ten grams of potassium cyanide and 32.90 milligrams of hemin chloride (obtained from the Eastman Kodak Co., Rochester, N. Y.) are dissolved in distilled water and diluted to one liter. The solution may be stored indefinitely at 4° C. and it is equivalent to 400 grams per liter of hemoglobin at a dilution of 1:501.

The calculations were made assuming the iron content of hemin to be 8.57% and that of the hemoglobin to be 0.334%. In preparing a solution of hemin chloride equivalent to 400 grams per liter of hemoglobin at a 1:501 dilution (0.02 ml. of blood added to 10 ml. of Drabkin's solution), the amount of hemoglobin is $\frac{400 \text{ gm.} \times 1000}{501} = 798.4$ mg. / liter. The amount of hemin (m.w. 616.84) required is found from the iron content of hemin and hemoglobin such as $\frac{798.4 \text{ mgm.} \times 0.334\%}{8.57\%} = 31.12$ mg. of hemin.

However, the available pigment was hemin chloride (m.w. 651.94) and the amount of hemin chloride required is $31.12 \times \frac{651.94}{616.84} = 32.90$ mg.

The standard reference curve is prepared by adding to a series of cuvettes 10, 9, 8, 7, 6, and 5 ml. of the potassium ferricyanide-cyanide solution, and 0, 1, 2, 3, 4, and 5 ml. of the cyanmethemoglobin standard respectively. The above solutions are equivalent to 0, 4, 8, 12, 16, and 20 grams / 100 m. of hemoglobin when 20 mm^3 of blood are added to 10 ml. of potassium ferricyanide-cyanide solution. The graph is prepared by plotting absorbancy at 540 mu against the equivalent hemoglobin concentration in g/100 ml. A calibration constant K may be computed for each concentration used, according to the formula $K=C/A$ where C is equivalent hemoglobin concentration in g/100 ml. and A absorbancy (2-log Transmission %). The values of K are averaged and the average multiplied by the absorbancy gives hemoglobin concentration in g/100 ml. An example of the cyanmethemoglobin curve with a $K=52.34$ is illustrated (Figure 1.).

The absorption spectra for cyanmethemoglobin solutions of animal (ox) hemin and human hemoglobin were also determined over the range of 325 to 700 mu. using a Beckman Spectrophotometer.

The reproducibility of the cyanmethemoglobin estimations was examined on 4 known weighed quantities of hemin that were equivalent to 4.1, 8.3, 12.0 and 16 grams of hemoglobin per 100 ml. respectively. The same calibrated pipette and cuvette were used to minimize the instrumental errors.

It was also decided to compare the hemoglobin estimation with the packed cell volume. These estimations were done on venous blood samples of 140 patients. The packed cell volume (P.C.V.) was determined by using the Wintrobe hematocrit tube which was centrifuged at a relative centrifugal force of 2260 G. for 30 minutes.

Results

The standard reference cyanmethemoglobin curve gave a linear relationship between absorbancy and hemoglobin concentration from 0 to 20 grams per 100 ml. and obeyed Beer's Law. (Fig. 1).

TABLE I

Reproducibility of the Cyanmethemoglobin Method

Equivalent Hemoglobin of sample g/100 ml.	Found Value g/100 ml. Mean*	Standard Deviation
4.1	4.02	±0.147
8.3	8.15	±0.187
12.0	12.12	±0.042
16.0	16.02	±0.147

*Mean of 6 replicated determinations.

The absorption curves of animal (ox) hemin and human hemoglobin were very similar with the minima at 505 to 515 mu and the maxima at 420 to 425 mu. (Fig. 2).

The reproducibility of the cyanmethemoglobin method was tested as described using four different concentrations of hemin. Six replicated estimations were made of each of the four hemin solutions. The means and standard deviations are given in Table 1.

The standard error of measurement for the 24 measurements was ±0.155 g/100 ml.

The hemoglobin determined by the cyanmethemoglobin method showed a high positive correlation with the packed cell volume. The correlation coefficient for the 140 blood samples was +0.967 (standard error = ±0.022, p 0.0001).

Discussion

The hemoglobin estimation has been one of the most useful procedures in clinical medicine. The cyanmethemoglobin method has many advantages in the laboratory in that the pigment is very stable[3], and the absorption band is broad at 540 mu. Also this procedure is calibrated against the measured hemin pigment[4] and not indirectly through iron determination or the oxygen capacity of the blood. The reference standard of cyanmethemoglobin should be carefully handled, labeled and either sealed or discarded immediately after use because of the potassium cyanide content. The small quantity of cyanide in the diluent is harmless, as the amount of potassium cyanide lethal for man is approximately 300 mg.[5] This is equivalent to 6 liters of the potassium ferricyanide-cyanide diluent.

Summary

A simple method for hemoglobin estimation is described. The method is precise, reproducible and the pigment is stable. Spectrum absorption curves showed a close similarity of the spectral characteristics of animal hemin and human hemoglobin. As animal hemin is easily obtained, it offers a great advantage for use as a standard cyanmethemoglobin reference.

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WHAT'S YOUR DIAGNOSIS?

A 29-year-old housewife was admitted to the hospital for evaluation of easy fatigability, ill-defined abdominal pain, nausea, and aching pain in the back and legs, particularly the tibiae, of $2\frac{1}{2}$ years duration. She had been seen on several occasions during this period for more acute episodes of abdominal pain. Various diagnoses, such as acute appendicitis, peptic ulcer, and porphyria, were considered and discarded. Several L. E. cell preps were negative. There was no history of toxic or drug exposure.

On physical examination, several small posterior cervical lymph nodes were noted. The liver was enlarged 3 cm., and the spleen 2 cm., below the costal margins. There was slight fissuring around the mouth, and the hair was somewhat sparse around the anterior crown. Axillary and pubic hair were normal.

Routine blood counts, urinalysis, sedimentation rate, liver function tests, and sternal bone marrow were all normal. X-rays of the chest, upper GI, colon, and gallbladder were negative. Liver biopsy was being considered when further questioning into specific drug exposure led to the correct diagnosis.

What's your diagnosis? See page 387

THE MASTER WORD

Though little, the master word looms large in meaning. It is the "open sesame" to every portal, the great equalizer, the philosopher's stone which transmutes all base metal of humanity into gold. The stupid it will make bright, the bright brilliant, and the brilliant steady. To youth it brings hope, to the middle-aged confidence, to the aged repose. It is directly responsible for all advances in medicine during the past 25 years. Not only has it been the touchstone of progress, but it is the measure of success in everyday life. And the master word is work.

William Osler, M.D.

The authors emphasize the need for caution in the performance of complement fixation tests for histoplasmosis. This test preferably should precede a histoplasmin skin test, or otherwise should be interpreted with caution. A single histoplasmin skin test can stimulate the formation of complement fixing antibodies in people with past or present histoplasma infection.

The Relation Between Histoplasmin Skin Sensitivity and Serologic Change

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SUMNER S. COHEN, M.D.*
EJVIND P. K. FENGER, M.D.*
Oak Terrace, Minnesota

Histoplasmosis is a systemic fungus infection caused by Histoplasma capsulatum. Thirty million Americans are estimated to have or to have had this infection, as evidenced by a positive reaction to the histoplasmin skin test (1). Routine histoplasmin skin tests at Glen Lake Sanatorium and its out-patient department between 1955 and 1960 revealed 37 percent of the patients at the Sanatorium had positive skin reactions while 33.1 percent of those tested at the out-patient clinic reacted positively. Earlier reports (2, 3) have indicated that multiple histoplasmin skin tests can stimulate antibody formation as determined by the serologic test. Recent studies (4, 5) have suggested that even a single histoplasmin skin test is capable of stimulating complement fixing antibodies.

The effect of a single histoplasmin skin test on the complement fixation serologic test for Histoplasma infection has been investigated at Glen Lake Sanatorium in cooperation with the Minnesota State Board of Health laboratories. This study was undertaken in an effort to determine the effect, if any, of a single histoplasmin skin test on the formation of histoplasmosis antibodies in the blood.

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*From the Medical Department
Glen Lake Sanatorium

Methods

The following procedures were observed during the course of the study:

1. Blood was withdrawn prior to the histoplasmin skin test and sent to the Minnesota State Board of Health laboratories, where the complement fixation test for Histoplasma infection was performed. This step is referred to, in this report, as the pre-test serologic evaluation.

2. The skin test, using histoplasmin (*), 0.1 cc., in 1:100 dilution, was then performed intradermally. An area of induration of 5 millimeters or more in greatest diameter was considered as a positive result.

3. Serologic tests were repeated one, two, and four weeks after the histoplasmin skin test, and the specimens were sent to the State laboratories, where complement fixation tests for the mycelial and whole yeast phase of Histoplasma infection were performed. When a positive serologic reaction was reported, additional specimens were analyzed at four-week intervals (eight weeks, twelve weeks, sixteen weeks, and so forth) in order to follow the titer until it became negative, or to 32 weeks. These determinations are referred to, in this report, as the post-test serologic studies.

Results

One hundred and fourteen patients were selected for evaluation. Eleven were subsequently removed from the study—three for non-cooperation, six by discharge, one by death, and one by transfer (before post-test serologic studies could be made). This report, therefore, includes 103 patients on each of whom a pre-test serologic study, a histoplasmin skin test, and one or more post-test serologic evaluations were made.

The remaining 103 patients were divided into: 1) a control group, consisting of 55 patients with negative histoplasmin skin tests, and 2) a study group of 48 patients with positive histoplasmin skin tests.

Thirteen of the 55 patients in the control group had had records of previously negative histoplasmin skin tests; two had previously had positive histoplasmin skin tests, and the remainder (40) had no record of a previous histoplasmin test. In this group, all but three remained negative throughout all three phases of the study. In the three exceptions, the histoplasmin skin tests were negative, but positive serologic reactions were reported in two of the three on the pre-test and in three or more post-test serologic studies. In the third exception, a positive serologic reaction was observed in the second week after the histoplasmin skin test had been applied. None of these three patients with positive serologic reactions had had a previous record of histoplasmin skin tests. The titer levels for these three patients are shown in Table A.

For statistical purposes, the 48 patients in the study group were divided into two categories: Group II-a, 31 patients with negative pre-test serologic findings, and Group II-b, 17 patients with positive pre-test serologic findings.

Twenty-four of the 48 patients in the study group were known to have had positive histoplasmin skin tests previously, and one had a record of a previously negative histoplasmin test. The remaining 23 patients had no record of previous histoplasmin skin tests.

Five of the 31 patients in Group II-a converted from negative to positive on the serologic

TABLE A
NEGATIVE HISTOPLASMIN TEST WITH POSITIVE TITERS (3 Patients)
(Control Group — 55 Patients)

Patient	Pre-Test Serologic Condition		Histoplasmin Skin Test	Post Test Serologic Condition at: 1 Week		2 Weeks		4 Weeks		8 Weeks		12 Weeks	
	A-1:	A-2:	(Induration in mm.)	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:
R. H.	Neg.	1:32	0	Neg.	1:32	Neg.	1:32	Neg.	1:64	Neg.	1:64	Neg.	1:64
J. H.	1:32	Neg.	0	1:16	Neg.	1:32	Neg.	1:8	Neg.	(Patient discharged)			
H. O.	Neg.	Neg.	0	Neg.	Neg.	Neg.	1:8	Neg.	Neg.	Neg.	1:8	Neg.	1:8

Abbreviations: A-1 — Antigen 1, histoplasmin (mycelial phase).
A-2 — Antigen 2, whole yeast phase.
Neg. — Negative.

test following administration of the histoplasmin skin test. The other 26 patients remained serologically negative. The titer levels for the first 12 weeks in these five patients are shown in Table B.

Four of 17 patients in Group II-b showed no change in titer following the histoplasmin test. The serologic titers at 12 weeks for these four patients are tabulated in Table C.

The titers were temporarily lowered in two cases following administration of the histoplasmin skin tests. In one additional case, the titer became negative at the one- and two-week determinations and then reverted to positive by the fourth week. Table D lists the titers for these three patients through the first 12 weeks.

In ten of the 17 patients in Group II-b the titers increased following the histoplasmin skin test. (One patient showed a temporary increase, followed by a decrease in titer at the second week.) The titers for these ten patients are listed in Table E.

Discussion

Positive histoplasmin skin tests were found in 48 (46.6 percent) of 103 individuals, which is somewhat higher than the usual incidence 33-37 percent, found in our in-patient and out-patient population. Seventeen patients (16.5 percent) had positive serologic findings prior to the histoplasmin skin tests. This relatively high incidence (16.5 percent), compared to the usual reported incidence of 10-11 percent (6-8), may be explained by the greater proportion of previously positive reactors and seropositive patients selected for this study. A routine complement fixation test for histoplasmosis was performed on all newly admitted patients prior to the administration of a histoplasmin skin test between June and December, 1960. Nine (14.2 percent) of 63 patients admitted during this period had positive serologic reactions.

A positive histoplasmin skin test has the same significance in histoplasmosis as a positive tuberculin test has in tuberculosis—namely, it indicates present or past infection with Histoplasma capsulatum (9-10). It therefore offers a useful index of the prevalence of this infection in a community. A recent conversion from a negative to a positive result on the histoplasmin skin test indicates recent exposure to this fungus.

A negative histoplasmin dermal test does not completely exclude the possibility of histoplasmosis. Yates (11) reported that among 98 cases of histoplasmosis proved by cultures, 19 patients (19.3 percent) showed negative skin tests to histoplasmin, and among 49 patients with histologically proved histoplasmosis, 10 patients (20.4 percent) had negative skin tests. In our series, among the 55 control patients, two patients with negative histoplasmin skin tests revealed positive reactions to the complement fixation tests. The histoplasmin skin test is useful as a screening procedure, which should be supplemented by serologic studies and cultures for Histoplasma capsulatum in order to determine definitely the presence of active or inactive disease.

The complement fixation blood test is useful as a screening procedure when the incidence of

TABLE B
CHANGE FROM NEGATIVE TO POSITIVE TITER FOLLOWING HISTOPLASMIN SKIN TEST (5 Patients)
(Study Group II-a, Positive Histoplasmin Test — 31 Patients)

Patient	Pre-Test Serologic Condition		Histoplasmin Skin Test	Post Test Serologic Condition at: 1 Week		2 Weeks		4 Weeks		8 Weeks		12 Weeks	
	A-1:	A-2:	(Induration in mm.)	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:
L. T.	Neg.	Neg.	20	Neg.	1:8	(Patient AWOL)				Neg.	1:16	Neg.	1:8
J. E.	Neg.	Neg.	34	1:8	Neg.	1:16	Neg.	1:8	Neg.	Neg.	Neg.	Neg.	Neg.
J. B.	Neg.	Neg.	18	Neg.	1:32	(Surgical patient)				1:32	1:256	Neg.	1:64
S. B.	Neg.	Neg.	5	Neg.	1:16	Neg.	1:32	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
G. S.	Neg.	Neg.	12	Neg.	1:8	Neg.	1:8	Neg.	1:8	Neg.	Neg.	Neg.	Neg.

Note: These five patients plus one patient listed in Table A (patient H. O.), make a total of six patients in whom titers changed from negative to positive following administration of the histoplasmin skin test.

Histoplasma infection is high. A positive serologic test for histoplasmosis indicates the presence of antibodies in the blood for this pathogen. Furcolow and Brasher (12), reported that 7.2 percent of the patients in one tuberculosis sanatorium had 'serologically proven' histoplasmosis. The frequency of 'mycologically proved' cavitary cases was 2.4 percent. Recent studies by Taylor, et al. (7), reported that 639 (11 percent) of 5,756 patients admitted had positive results on serologic tests for histoplasmosis. Fifty-one (0.9 percent) of the total group were proved to have histoplasmosis by cultural or histological methods. The incidence (14.2 percent) in our series of positive serologic tests for histoplasmosis on all patients admitted leads us to believe that the antigens used for complement fixation tests at the Minnesota State Board of Health laboratory may be more sensitive than those used by the laboratories of the Veterans Administration and the United States Public Health Service.

A negative complement fixation test does not entirely eliminate the diagnostic possibility of histoplasmosis. Yates (11), for example, has reported that of 99 patients with culturally proved histoplasmosis, 10 patients (10.1 percent) had negative complement fixation tests, and of 50 patients with histologically proved histoplasmosis, 36 (72 percent) had negative complement fixation tests. Positive results on complement fixation tests for histoplasmosis can be useful in directing efforts toward cultural isolation of the fungus and in differentiating histoplasmosis from other pulmonary diseases. Patients with positive serologic reactions should be followed regularly until the serologic tests become negative. The serologic test also has prognostic value, since a decreasing titer indicates that the infection is receding.

That a single histoplasmin skin test may stimulate complement fixation antibodies has been demonstrated by Nicholas and his colleagues (4). Their study revealed that the serologic reactions of four (17.3 percent) of 23 skin-test positive patients changed from negative to positive. In our study of 103 patients, five (16.1 percent) of the 31 skin-test positive patients converted from negative to positive results on complement fixation tests, and one (1.9 percent) of the 53 skin-test negative individuals converted from negative to positive. In serologically positive patients, a single histoplasmin skin test may increase the titer of complement-fixing antibodies. Ten of 17 serologically positive patients showed an increase

TABLE C
NO CHANGE IN TITER FOLLOWING HISTOPLASMIN SKIN TEST (4 Patients)
(Group II-b — 17 Patients)

Patient	Pre-Test Serologic Condition		Histoplasmin Skin Test	Post Test Serologic Condition at: 1 Week		2 Weeks		4 Weeks		8 Weeks		12 Weeks	
	A-1:	A-2:	(Induration in mm.)	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:
M. N.	Neg.	1:32	15	Neg.	1:32	Neg.	1:32	Neg.	1:32	(Patient discharged)			
B. S.	Neg.	1:64	20	Neg.	1:64	Neg.	1:64	Neg.	1:64	(Patient absent)			
B. O.	Neg.	1:32	24	Neg.	1:32	Neg.	1:32	Neg.	1:32	Neg.	1:32	Neg.	1:32
M. G.	Neg.	1:64	14	Neg.	1:64	Neg.	1:64	Neg.	1:64	Neg.	1:64	Neg.	1:64

TABLE D
DECREASE IN TITER FOLLOWING HISTOPLASMIN SKIN TEST (3 Patients)
(Group II-b — 17 Patients)

Patient	Pre-Test Serologic Condition		Histoplasmin Skin Test	Post Test Serologic Condition at: 1 Week		2 Weeks		4 Weeks		8 Weeks		12 Weeks	
	A-1:	A-2:	(Induration in mm.)	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:
J. P.	Neg.	1:64	14	Neg.	1:32	Neg	1:64	Neg.	1:64	(Patient discharged)			
G. N.	Neg.	1:32	8	Neg.	1:16	Neg.	1:16	Neg.	1:8	Neg.	1:16	....	
P. Y.	Neg.	1:32	22	Neg.	Neg.	Neg.	Neg.	Neg.	1:16	Neg.	1:16	Neg.	Neg

in titer following administration of the histoplasmin skin test; four individuals exhibited no change, and three demonstrated a decrease.

Summary

One hundred and three patients were followed for periods ranging to 32 weeks. A pre-test serologic study, a histoplasmin skin test, and one or more post-test serologic evaluations for Histoplasma infection were performed on each of these patients. They were divided into three groups, as follows:

Group I. The control group consisted of 55 patients with negative histoplasmin skin tests. Fifty-two of these 55 patients were serologically negative and all pre-and post-test serologic reactions remained negative. Three patients in this group demonstrated positive serologic reactions. In two of the three patients, pre-test and three or more post-test serologic evaluations gave positive results (even though the study histoplasmin skin tests were negative). In the third case, the post-test serologic reaction became positive the second week after administration of the histoplasmin skin test.

Group II-a. This group of 31 patients was serologically negative before the skin test was given but reacted positively to the histoplasmin skin test. In five of these patients, positive serologic reactions developed following administration of the histoplasmin skin tests. The remaining 26 patients in this group continued to be serologically negative.

Group II-b. This group consisted of 17 patients with positive pre-test serologic reactions and positive histoplasmin skin tests. Ten patients of this group showed an increase in titer following administration of the histoplasmin skin test. In seven of the ten patients, an increase in titer was noted at the first week; in two, the titer increased by the second week, and in the other, the increase came at the fourth week after the histoplasmin test was given. In one patient the titer increased temporarily at the first week, then decreased at the second week, and finally returned to the pre-test level by the fourth week. Four patients showed no change in titers, while in three others titers were decreased after histoplasmin skin tests were applied.

Conclusions

A single histoplasmin skin test is capable of stimulating formation of complement fixing antibodies in individuals with past or present Histoplasma infection. In our study of 103 patients, five (16.1 percent) of 31 skin-test positive sub-

INCREASE IN TITER FOLLOWING HISTOPLASMIN SKIN TEST (10 Patients)
(Group II-b — 17 Patients)
Table E

Patient	Pre-Test Serologic Condition		Histoplasmin Skin Test	Post Test Serologic Condition at: 1 Week		2 Weeks		4 Weeks		8 Weeks		12 Weeks	
	A-1:	A-2:	(Induration in mm.)	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:	A-1:	A-2:
H. S.	Neg.	1:32	20	Neg.	1:64	Neg.	1:32	Neg.	1:32	Neg.	1:32	Neg.	1:8
J. W.	Neg.	1:32	5	Neg.	1:64	(Patient discharged)							
E. R.	Neg.	1:64	21	Neg.	1:128	1:8	1:128	1:16	1:64	1:16	1:128	Neg.	1:64
K. B.	Neg.	1:32	18	Neg.	1:32	Neg.	1:64	Neg.	1:32	Neg.	1:32	Neg.	1:8
H. H.	Neg.	1:32	26	Neg.	1:128	Neg.	1:128	(Patient discharged)					
C. G.	Neg.	1:32	18	Neg.	1:32	Neg.	1:32	Neg.	1:64	Neg.	1:64	Neg.	1:32
D. W.	Neg.	1:16	11	Neg.	1:16	Neg.	1:32	1:8	1:64	(Patient discharged)			
G. T.	Neg.	1:16	12	1:8	1:16	Neg.	1:8	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
B. F.	1:16	1:64	30	1:16	1:128	1:8	1:64	1:16	1:64	1:8	1:256	1:8	1:64
P. T.	Neg.	1:16	11	Neg.	1:32	Neg.	1:8	Neg.	1:16	Neg.	1:16	....	

Note: These 10 patients plus one patient listed in Table A (patient R. H.), make a total of eleven patients who demonstrated an increase in titer following administration of the histoplasmin skin test.

jects converted from negative to positive serologic reaction following administration of histoplasmin antigen, while one (1.9 percent) of 53 skin-test negative individuals changed from negative to positive. Among 17 seropositive patients, a single histoplasmin skin test served as a booster in ten, no change was noted in four, and a decrease in titer was found in three patients.

A positive complement fixation test for histoplasmosis following the administration of a histoplasmin skin test should be interpreted with caution. Serologic tests performed prior to skin testing may be more reliable and meaningful. Complement fixation titers lower than 1:32 have little value in establishing a diagnosis of active histoplasmosis.

Routine histoplasmin skin tests at Glen Lake Sanatorium and its out-patient clinic between 1955 and 1960 revealed positive dermal sensitivity to histoplasmin of 37 percent of the patients in the sanatorium and 33.1 percent of the patients tested at the out-patient clinic. Routine serologic studies made prior to the administration of histoplasmin indicated that 14.2 percent of the patients were serologically positive.

Positive results on either histoplasmin skin tests or serologic tests or both require further evaluation utilizing cultures and special stains of secretions and pathologic materials in order to demonstrate the presence of Histoplasma capsulatum.

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Answer to What's Your Diagnosis—from page 381

DIAGNOSIS: Chronic Vitamin A intoxication. The patient had been taking between 50,000 and 100,000 units of Vitamin A for 4 or 5 years, originally prescribed for acne. Following this disclosure, her serum Vitamin A level was found to be 270 I. U. (normal less than 200). Definite symptomatic improvement occurred within a week after withdrawal of this medication. It is of interest that the patient did not think of Vitamin A as a drug, and hence did not mention it when asked originally about medications.

Additional reading: Josephs, H. W.—Hypervitaminosis A. Am. J. Dis. Child. 67:33-1944

When anemia does not respond to therapy with iron, the author wants to know the answers to certain questions. First of all, is anemia really present? If so, is it of the iron-deficiency type? If it is, has the patient been taking the prescribed medicament? Has he been getting it in sufficient amounts? Is it being absorbed and utilized? Finally, is there perhaps an unknown source of bleeding, frank or occult?

Anemia not Responding to Iron Therapy *

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WHEN ANEMIA does not respond to therapy with iron it is reasonable to suspect that the problem is related to something other than iron. This, however, is not necessarily so.

The anemia may not be responding because there is, in fact, no anemia present. Ordinarily, I do not consider hemoglobin values of more than 13 gm. per 100 ml. of blood in men and 11.5 gm. in women to represent anemia. When a value lower than this is reported by the laboratory, it is important to be certain that the observation is a valid one; errors may occur in any laboratory procedure. An important point is not to make a diagnosis of anemia on the basis of a single observation and, when the laboratory does report the presence of anemia, to be certain to check on the reliability of the method used for the determination. The Tallquist method for determining concentration of hemoglobin, for example, is entirely unreliable. Counting of erythrocytes is also an unreliable method; in the best of circumstances there may be a variation of 11 per cent from one count to another, and when the procedure is not carefully controlled the variation may be as great as 22 per cent.[1]

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Causes for Non-response

When it has been clearly established that anemia exists, it is important to attempt to classify the nature of the anemia before treatment is prescribed. Iron treatment is only effective in iron-deficiency anemia. Vitamin B_{12} is effective when there is a deficiency of this substance, as in pernicious anemia. Neither iron nor vitamin B_{12} is effective in folic acid deficiency. There is no justification for the use of multihematinics in the hope of covering the field of anemias. An important remediable lesion may be obscured or a preventable complication missed by such an approach to treatment. One of the most important means for determining the type of anemia—and an observation that every physician should make—is the examination of a well-made, well-stained blood smear.

Failure to take Medication

When one encounters a clear-cut case of iron-deficiency anemia not responding to treatment, there may be several reasons for this. An obvious reason, but one that is frequently overlooked, is failure on the part of the patient to take the medicament prescribed. For reasons not clear to me, this seems to be a relatively common occurrence when iron is needed. Likewise, persons serving as blood donors often take their iron pills only for the week or two immediately following the blood donation. It is known that there is a refractory period 5 to 10 days after acute blood loss before increased iron absorption occurs; thus, most blood donors lose the advantage of their iron medication if they do not continue taking it longer than 2 weeks.

Inadequate Treatment

Another important situation to recognize is the case of true iron deficiency that is refractory to treatment because the treatment is inadequate to meet the demands of the loss. This is best illustrated by the case of a woman with menorrhagia who is taking a minimal dose of iron but who loses more blood with each menstruation than can be regenerated between menstrual periods; this occurs more often than is thought. The average normal menstrual blood loss is less than 50 ml. My colleagues and I have on numerous occasions demonstrated with the use of radioisotopes a menstrual blood loss of more than 250 ml. during a menstrual period considered normal by the patient. One patient had a blood loss of more than 600 ml. in a period that she considered normal. A similar situation may occur in bleeding from the gastrointestinal tract due to various lesions, even when the bleeding is occult.

Lack of Absorption

Failure to absorb iron from the gastrointestinal tract may be a cause of anemia. Except for sprue and steatorrhea following certain operative procedures, this phenomenon is rare and for all practical purposes may be excluded. After gastrectomy, iron-deficiency anemia is more common than macrocytic anemia; however, in time both may develop in the same patient.

Lack of Utilization

Failure to utilize iron properly after absorption from the gastrointestinal tract is not so uncommon, and this factor plays a part in the anemia of chronic infection, chronic renal disease, certain cases of so-called refractory or aregenerative anemia, and the anemias of rheumatoid arthritis, lupus erythematosus, cranial arteritis, and similar conditions. In such cases the anemias all fail to respond to iron treatment. Usually the clinical recognition of these states does not pose a diagnostic problem, however.

Thalassanemia

Thalassanemia is among the causes of anemia that may be confused with iron-deficiency anemia, but thalassanemia fails to respond to treatment with iron. This condition is now known to be relatively common, and it is not confined to the Mediterranean races. When present as thalassanemia minor, no treatment is required. Iron, in fact, is contraindicated in this condition because of the ability of these patients to readily absorb this metal even though not deficient in it; consequently, hemosiderosis and possibly other pathophysiologic changes may result from overloading with iron. Like iron-deficiency anemia, the anemia of thalassanemia is hypochromic and microcytic. In addition, there is usually a relative polycythemia characterized by a high erythrocyte count, the presence of some target cells, basophilic stippling, a normal or high concentration of serum iron, and frequently an increase of the A_2 component of the hemoglobin electrophoretic pattern.

Pyridoxine

Morphologically, the anemia of pyridoxine deficiency is similar to that of iron deficiency;

however, it fails to respond to iron medication. In these cases there is an abnormality of iron metabolism that is reflected by the high concentration of serum iron always observed. The anemia does respond to oral ingestion of pyridoxine. It is an extremely rare condition and ordinarily need not be considered.

Myxedema

It is not uncommon to see a case of chronic anemia that fails to respond to iron therapy and is eventually recognized as a problem of myxedema. The anemia of myxedema is fundamentally a normochromic, normocytic anemia and rarely a macrocytic one. It responds only to thyroid replacement. However, it is important to know that this anemia is slow to respond to treatment, often lagging far behind the clinical response of the symptoms of the myxedematous state. A hypochromic, microcytic anemia is frequently seen in association with myxedema, but this is invariably the result of menorrhagia, which is a common feature of myxedema in women; in such cases both thyroid extract and iron are required for an adequate response.

Hemolytic Anemia

In hemolytic anemia there is excessive destruction of blood. This type of anemia may be primary or secondary, congenital or acquired. Whatever the etiology, iron therapy is not helpful; there is no loss of iron from the body and no deficiency of iron. In certain of these cases, splenectomy or steroid therapy is often dramatically effective.

Finally one can list all the other types of anemia; they all will fail to respond to iron.

Uremia

It seems worth while in this discussion to call attention to one more condition we frequently see treated for long periods without effect. Uremia may be very insidious in its onset, whether it is due to prostatic obstruction, pyelonephritis, chronic glomerulonephritis, polycystic disease, collagen disease, or one of the many other causes. It may be accompanied by an anemia that will fail to respond significantly to iron or, for that matter, to any other hematinic. The treatment of this anemia is the treatment of the underlying disease. Supplemental transfusions give symptomatic benefit.

Summary

1. Always recheck the laboratory results. A single laboratory test should not be considered adequate for absolute diagnosis. Be certain that anemia really exists.
2. Be sure your patient is taking the medication you prescribed. No response can be anticipated if no treatment is being carried out.
3. When a patient with anemia treated with iron fails to respond after adequate trial, first consider whether the diagnosis is correct. Never continue treatment for weeks or months in anticipation of a delayed reaction; rarely does this occur in true iron deficiency. A gain of ½ gram in the level of hemoglobin per week can be considered adequate response when an equivalent of 15 grains of ferrous sulfate per day is taken by mouth.
4. Consider the possibility that menorrhagia or occult gastrointestinal bleeding is present when a patient with hypochromic, microcytic anemia fails to respond sufficiently to adequate treatment.
5. Always think of thalassanemia minor in the differential diagnosis. This condition requires no treatment.
6. Exclude myxedema and uremia, among many other conditions, when the patient fails to respond to iron therapy.
7. Hemolytic anemia is not helped by iron Steroid therapy or splenectomy may be effective in these anemias.
8. Finally, do not prescribe iron when iron deficiency does not exist.

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Everyone has his pet scheme for spending other people's money. C.O.R.

Obstetrical Analgesia and Anesthesia Services in Minnesota Hospitals

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Data from our own community is always more appealing. This paper analyzes a study of major hospitals in Minnesota evaluating the common practices for providing obstetrical analgesia and anesthesia. The programs in many hospitals would benefit from this report.

The quality of analgesia and anesthesia services in obstetrical departments is a problem of prime concern to obstetricians and physicians in hospitals. Relatively little has been done to improve the level of competence in this vital area of hospital service. Generally, responsibilities have not become established, practices have not been stabilized, and coordinated effort has not been achieved to provide safe procedures for maternity patients. Understandingly, Dr. Walter Rattan in his discussion on the philosophy of obstetrical anesthesia makes two relevant points.[1] First, traditional methods will continue to be used in the foreseeable future and second, anesthetic tragedies in delivery rooms occur not because of inadequate agents but are due to their improper use. This, of course, reflects on training of personnel. Many lives could be saved by knowing and adhering to common basic principles in obstetrical analgesia and anesthesia.

This neglected area warrants a complete study by hospital boards and administrators to re-evaluate the present obstetrical analgesia and anesthesia services, to develop sound practices, and to establish a working system to care adequately for maternity patients. The Minnesota Maternal Mortality Study Committee[2] states that since almost all of the deliveries are conducted in hospitals, maternal mortality could probably be lowered further by general adoption and enforcement of effective hospital regulations governing obstetric practice, and that the formulation and enforcement of such regulations should be the joint responsibility of hospital staffs, hospital administrators, and official health agencies concerned. Such recommendations have been made in the **Suggested Guide for Obstetric Hospital Practice**[3] which was approved by the Council of the Minnesota State Medical Association in December, 1959.

Professional nurses employed in obstetrical services are very often called upon to administer analgesia and anesthesia; therefore, they should be prepared to assume this responsibility. Usually this is not the case. Schools of nursing regard anesthesia as a medical procedure and have done little to further the training in this area. Without this background and subsequent experience professional nurses are not competent to carry a maternity patient through an anesthetic. Most registered nurses employed on maternity services have only a limited understanding of analgesic and anesthetic drugs, procedures, or resulting complications. On-the-job experience oftentimes is an aid to those who have managed over the years to pick up information relative to their work. However, there is no substitute for the formal training and clinical application of procedures offered in schools of anesthesia.

Approximately one-half of the hospitals (84 of 175) that provided obstetrical services in Minnesota in 1956-1957 had certified registered nurse anesthetists (C.R.N.A.'s) employed to give anesthesia care.[4] Less than two-thirds (63%) of these personnel were employed in 25 hospitals with 131 beds and over. Although these personnel are on routine call in hospitals, instances occur when they are occupied in surgery making nurses on maternity services responsible for analgesia and anesthesia care to mothers during deliveries.

Since births occur at unscheduled times, it is apparent that the obstetrical patient under normal conditions may have to depend on general duty personnel to administer analgesia and anesthesia. This is especially true in the smaller hospitals where few or no nurse anesthetists are employed. These situations of necessity require personnel who may not be trained or experienced to be thrust into difficult situations to give anesthetic drugs. Dr. Rattan continues in his article stating that one of the most important facts about obstetrical anesthesia is that it is difficult. Patient conditions common in the delivery room, such as a full stomach, infection, obesity, recent hemorrhage, and pain, would be grounds for cancellation of many elective operations because of anesthetic hazards.

Most hospital administrators agree that administration of obstetrical analgesia requires skill and training; however, a few are satisfied to entrust this responsibility to untrained personnel. In some cases obstetrical services suffer because of shortage of trained personnel or small case loads that cannot justify full-time employees. In these instances the administrator must, of course, yield to an improvised situation. The Committee on Maternal Health of the Minnesota State Medical Association recommends that a general anesthetic should be administered only under the supervision of an adequately trained person.[3] The potential anesthesia hazards in childbirth which might give rise to complications even in the so-called simple deliveries should alert hospitals to seek qualified and capable personnel to aid physicians and to give adequate anesthesia care. Dr. Rattan concludes with an appropriate statement, that a poor method in expert hands is infinitely safer than a good one which is inexpertly employed.

To evaluate the quality of obstetrical anesthesia services from the standpoint of personnel, procedures, and drugs being used in Minnesota hospitals, a survey was made in 1959-60 of all 174 general hospitals providing obstetrical services. Results of mailed questionnaires were received from 172 hospitals giving selective information regarding hospital obstetric practices.

Obstetrical Deliveries

There were 87,252 deliveries in 172 general hospitals in Minnesota during a 12-month period in 1959-1960. Less than one per cent of the births (0.6%) occurred outside of hospitals. Table 1 shows that the majority of deliveries occurred

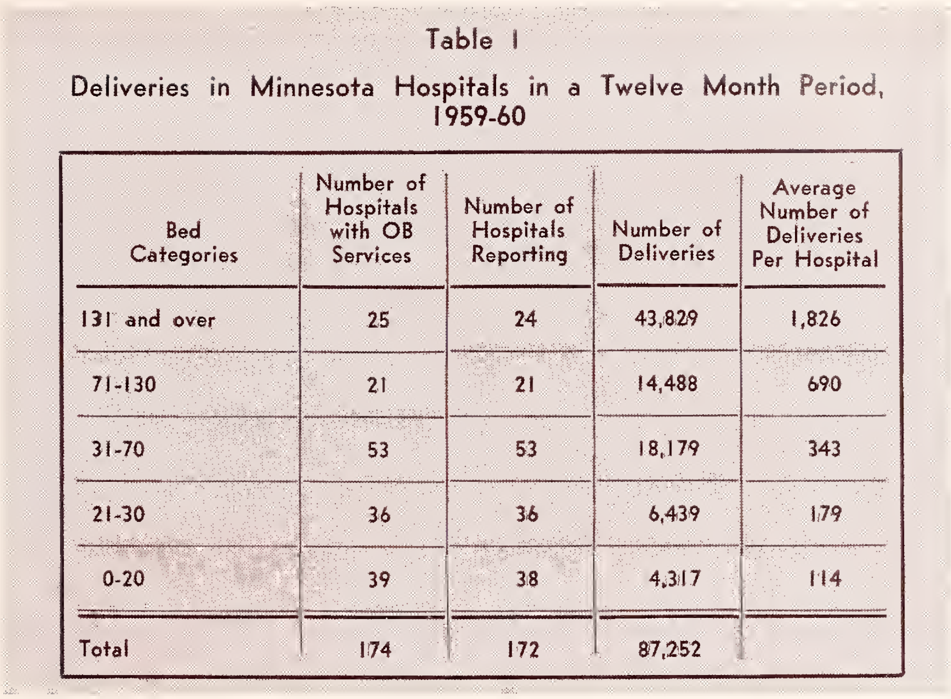

Table I

Deliveries in Minnesota Hospitals in a Twelve Month Period, 1959-60

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Number of Deliveries	Average Number of Deliveries Per Hospital
131 and over	25	24	43,829	1,826
71-130	21	21	14,488	690
31-70	53	53	18,179	343
21-30	36	36	6,439	179
0-20	39	38	4,317	114
Total	174	172	87,252	

in large centers which have better facilities and trained personnel. More than one-half of the births occurred in hospitals with 131 beds and over. This yields 1,826 deliveries per year for each hospital in this classification which averages 304 beds. In addition, this group of hospitals located in predominantly urban areas provides a ratio of 6.10 births per bed for the year. In comparison the birth ratio for all hospitals with less than 131 beds is 7.26, and for the total bed capacity in the State is 6.57, indicating that while more deliveries took place in urban centers, a higher ratio of deliveries per bed occurred in the rural area.

Personnel

Most of the analgesics and anesthetics in small hospitals are given to obstetrical patients by registered nurses as noted in Table 2. Anesthesiologists supervised obstetrical anesthesia in eleven hospitals, ten of these had 71 beds or more. Thirty-six hospitals, 81% with 70 beds or less, had physicians, some with additional training in anesthesia, who supervised as well as administered obstetrical anesthesia to patients.

Nurse anesthetists with a variety of training in the administration of anesthesia gave anesthetics to maternity patients in 95 hospitals as work loads permitted. These included certified registered nurse anesthetists (C.R.N.A.), registered nurses formally trained in anesthesia but not certified, registered nurses with anesthesia training in non-approved schools, and registered nurses trained on-the-job in anesthesia. However, 104 hospitals, 92 or 89% of which had less than 70 beds, employed registered nurses, primarily on general duty, to give routinely anesthetics to obstetrical patients.

With anesthesiologists limiting their services to difficult surgical cases, supervision, teaching and research, and with other physicians restricting their obstetrical anesthesia practice to administration of spinal and local blocks and departmental direction, much of the analgesics and general anesthetics in obstetrics are being given by nurse anesthetists and registered nurses. The latter group assumes the major burden for this, particularly, in the small hospitals.

Agents and Procedures

The route and the type of agents administered to obstetrical patients are dependent upon a number of factors. This decision, of course, rests with the physician. Obstetrical services in hospitals reported a variety of routine procedures and drugs used for anesthesia and analgesia.

Inhalation agents — Nitrous oxide and oxygen proved to be the most common choice of in-

Table 2

Personnel Administering Obstetrical Analgesia and Anesthesia in Minnesota Hospitals, 1959-60

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Number of Hospitals Not Reporting	Anesthesiologists	Physicians	Nurse Anesthetists*	Registered Nurses	Others With Less Than RN Training
131 & over	25	24	0	5	3	23	3	0
71-130	21	21	0	5	4	18	9	0
31-70	53	52	1	1**	12	31	33	0
21-30	36	36	0	0	9	13	31	1
0-20	39	35	3	0	8	10	28	2
Total	174	168	4	11	36	95	104	3

*Registered nurses trained in nursing anesthesia
**Part time

halation analgesia administered in delivery rooms. Table 3 shows the variety of inhalation agents used in obstetrics. One hundred and one hospitals used nitrous oxide and oxygen, 87 hospitals used the self-administered analgesic agent trichlorethylene, known as Trilene or Trimar. Sixty-one hospitals used ether as an anesthetic agent. Ethylene and oxygen, extremely explosive in combination,[5] were used in six hospitals. Chloroform, a toxic agent in the hands of skilled as well as unskilled, was used in six hospitals, as compared to 18 reported in an anesthesia survey of Minnesota hospitals in 1956-57.[6] This advance is attributed to education and the desire of hospitals to improve patient care.

Pudendal Blocks — Anesthesia services in 137 hospitals reported several common types of local anesthetic drugs used for deliveries with pudendal blocks. Of these, 100 hospitals used procaine, 58 used Xylocaine, 26 used Cyclaine and 5 used other drugs principally Novocaine. Several hospitals, particularly large ones, used two or more local anesthetics routinely for pudendal blocks. Thirty-five hospitals did not reply to this item and can be assumed not to use this procedure.

Combined Local and General Anesthesia — One hundred and six hositals reported use of combined local and general anesthesia for vaginal deliveries as the usual procedure. Procaine and Xylocaine were the drugs of choice for local anesthesia, while nitrous oxide and oxygen in combination with ether and/or cyclopropane were commonly used to attain general anesthesia.

Low Spinals — Physicians in 51 hospitals gave saddle blocks or low spinals to obstetrical patients. Pontocaine with dextrose was the drug of choice in 22 hospitals (43%). Nupercaine, procaine, and Novocaine were used for the most part in the remaining hospitals.

Caudal Anesthesia — Since Caudal anesthesia requires considerable time, particular skill, and suitable candidates, this procedure was limited in its use. Only 13 hospitals reported use of the caudal route as a means of anesthesia. Novocaine and Metycaine were the drugs commonly chosen.

Hypnosis — This relatively new procedure was used in 11 hospitals. In most of these only one or at most two physicians practiced hypnosis, and the number of deliveries by this procedure was limited to occasional cases. This practice was carried out in five small hospitals (70 beds and less). Success of hypnosis requires special interest and training of the physician and much time in early and continuous preparation of the patient, consequently these factors limit its use as a widespread procedure.

Table 3

Inhalation Agents Used During Deliveries in Minnesota Hospitals, 1959-1960

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Number of Hospitals Not Reporting	Nitrous Oxide and Oxygen	Trichlorethylene	Ether	Cyclopropane and Oxygen	Vinethene	Chloroform	Ethylene and Oxygen	Ether, Nitrous Oxide & Oxygen
131 & over	25	22	2	21	7	8	16	1	1	2	0
71-130	21	20	1	19	8	10	9	1	1	1	1
31-70	53	51	2	32	27	24	8	4	2	2	0
21-30	36	36	0	15	23	10	3	3	0	0	0
0-20	39	37	1	14	22	9	3	2	2	1	0
Total	174	166	6	101	87	61	39	11	6	6	1

Table 4

Anesthetics and Procedures Used for Cesarean Sections in Minnesota Hospitals, 1959-60

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Number of Hospitals Not Reporting	General Anesthesia			Conduction Anesthesia		Local and General Anesthesia	Other
				Pentothal, Nitrous Oxide & Oxygen	Pentothal, Cyclopropane & Oxygen	Cyclopropane, Ethylene, Nitrous Oxide & Oxygen	Spinal	Local Block		
131 & over	25	24	0	11	2	1	15	3	9	4
71-130	21	21	0	9	3	1	13	2	11	5
31-70	53	52	1	24	5	2	11	4	30	6
21-30	36	34	2	15	3	1	8	7	16	6
0-20	39	27	11	10	3	0	8	6	11	4
Total	174	158	14	69	16	5	55	22	77	25

Caesarean Sections

Cesarean sections were done in 158 hospitals. In the 14 hospitals which did not report, it can be assumed that Cesarean sections were not performed routinely. Seventy-seven hospitals reported use of the combination of local and general anesthesia for this surgical procedure. In most of these cases physicians used regional blocks for the surgical delivery and then gave the mother a general anesthetic to complete the procedure. In most other hospitals (81) the patient was given a general anesthetic prior to the initial incision and the baby was then surgically removed within several minutes to avoid serious difficulties with resuscitation of the infant. Table 4 shows the variety of anesthetic agents usually given in hospitals in Minnesota for Cesarean sections.

Analgesic Drugs

Personnel in 166 hospitals gave analgesic drugs

Table 5

Analgesics Used for Maternity Patients in Labor in Minnesota Hospitals, 1959-1960

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Number of Hospitals Not Reporting	Demerol	Trichlorethylene	Phenergan*	Mepergan	Scopalomine	Nisentil	Barbiturates		Amytal	Other
										Seconal	Nembutal		
131 & over	25	24	0	20	7	12	6	10	6	8	3	1	8
71-130	21	21	0	18	8	12	9	4	3	1	1	0	8
31-70	53	52	1	49	27	25	17	7	10	8	1	2	6
21-30	36	34	2	30	23	16	9	4	3	4	2	0	2
0-20	39	35	3	30	22	15	11	5	3	6	1	0	3
Total	174	166	6	147	87	80	52	30	25	27	8	3	27

*Usually given with demerol.

for relief of pain to maternity patients in labor. These drugs were usually given in the first stage of labor and less often in the early second stage. By far the most common analgesic drug prescribed was Demerol (147 hospitals) followed by trichlorethylene which was used in 87 hospitals, Phenergan usually combined with Demerol in 80 and Mepergan in 52 hospitals. Table 5 gives other less commonly used drugs, most of which were administered in larger hospitals. Many hospitals reported use of more than one kind of analgesic agent, and some used combinations of drugs to attain desired levels of analgesia.

Food and Liquid Intake

Policies regarding food and liquid restrictions during labor are set by the medical staff in general and by the medical head and staff of the obstetrical service in particular. Despite the suggestions for denial of food by authorities to patients in labor and the consequences of aspiration of vomitus, hospital practice persists in taking the chance of disaster.

Table 6 shows obstetric hospital practice relative to food and liquid intake for patients in labor. Ten hospitals, all under 70 beds, allowed patients in labor to eat and drink without restriction. In addition, 25 hospitals which did not respond to this item can be assumed for the most part to fall within this classification or have no policy to guide personnel. The majority of these are small hospitals. One hundred and thirty-seven hospitals maintain some degree of restriction on solid foods and/or liquids. One hundred and twenty-five hospitals withheld solid foods while 23 did not. Twenty-four hospitals did not give a response and are assumed to have no food intake policy for patients in labor.

Seventy-five hospitals restricted liquids to some degree, mostly predicated on the principle to "cut down" on fluid intake. Seventy-six hospitals did not restrict liquids in any way while 21 made no statement in this respect. Several factors affected the degree of restriction; for instance, multiparas were given more liberties with liquids, and patients in advanced labor were cut to sips or no liquids. The length of labor tended to relax the restriction to some extent.

Summary

Of the 174 general hospitals in Minnesota which offered obstetrical services in 1959-60, 172 replied to a mailed questionnaire with selective answers regarding obstetric hospital practice.

Hospital deliveries in Minnesota in 1960 constituted 99.4% of all births.

Approximately one-half of all deliveries occurred in hospitals with less than 130 beds, most of which are located in rural areas where there

Table 6

Policies and Practices Relative to Food and Liquid Intake for Maternity Patients in Labor in Minnesota Hospitals, 1959-1960

Bed Categories	Number of Hospitals with OB Services	Number of Hospitals Reporting	Solids Restricted			Liquids Restricted			Allowed to Eat and Drink without Restriction		
			Yes	No	Not Stated	Yes	No	Not Stated	Yes	No	Not Stated
131 & over	25	24	16	6	2	18	6	0	0	21	3
71-130	21	21	17	3	1	11	10	0	0	18	3
31-70	53	51	40	5	8	23	22	8	5	40	8
21-30	36	34	19	6	11	12	14	10	3	27	6
0-20	39	38	33	3	2	11	24	3	2	31	5
Total	174	168	125	23	24	75	76	21	10	137	25

are relatively few anesthesiologists and a limited number of formally trained nurse anesthetists, placing the burden of nursing anesthesia for obstetrical patients upon lesser trained personnel. The more difficult procedures were carried out in the larger hospitals where better trained and more capable personnel were employed.

Six common routes and a wide variety of drugs are utilized for obstetrical anesthesia.

Cesarean sections which are treated as surgical cases were performed in 92% of the hospitals. Anesthesia for these is given principally by anesthesiologists, physicians, and/or nurse anesthetists.

For analgesia, Demerol was the most commonly prescribed drug followed by self-administered trichlorethylene.

Policies relative to ingestion of solid foods are not universally enforced by hospitals. Rigid adherence to denial of solids to mothers in labor provides a margin of safety that all hospitals should practice in obstetrics.

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1. This work was supported by U. S. Public Health, National Institutes of Health, Division of Research Grants. (Research Grant W-49)
2. A portion of the data in this report was taken from survey material presented to the Upper Midwest Assembly of Nurse Anesthetists, May, 1960, by Sister Mary Daniel, Chief Nurse Anesthetist, St. Gabriel's Hospital, Little Falls, Minnesota.
3. Helen L. Knudsen, M. D., Director, Division of Hospital services; A. B. Rosenfield, M. D., Director, Division of Special Services; and Martha J. Lundgaard, C.R.N.A., Consultant in Nursing Anesthesia, Minnesota Department of Health, Minneapolis, Minnesota.

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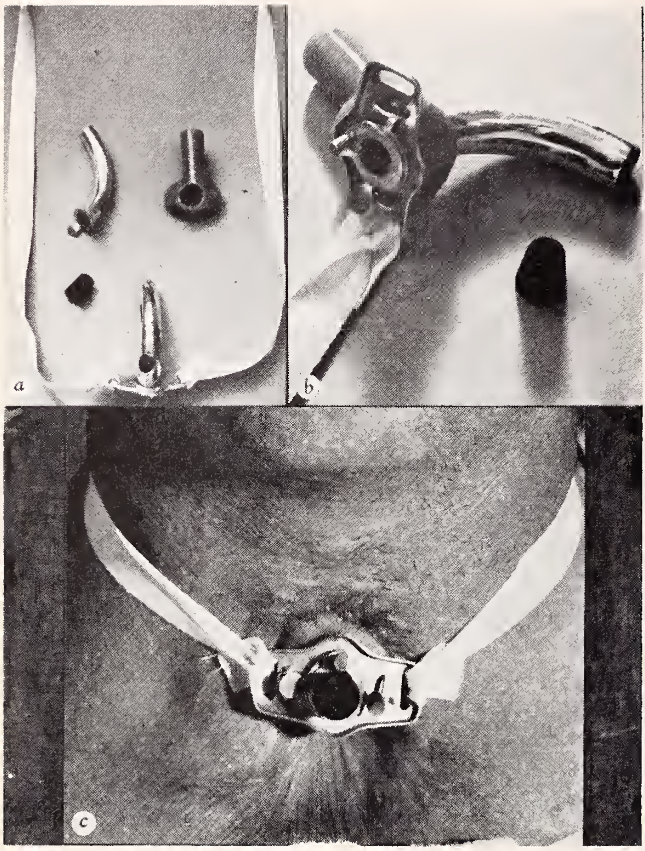

Fig 1

Fig. 1. **a.** Mechanical appliance used with tracheal cannula to permit breathing through mouth and nose and speaking in a normal manner. Acrylic device (upper right), inner and outer tracheal cannulae, and rubber cork used to occlude the normal outer opening of the tracheotomy tube. Note the hole in the top of each cannula at the site of contact with the acrylic appliance. **b.** The appliance has a ringlike extension below, through which the tracheal cannula is inserted. **c.** Appliance and tracheal cannula in proper position.

Appliance for

JOHN B. ERICH, M.D.*
Rochester, Minnesota

Cicatricial stenosis of the larynx and upper part of the trachea usually can be corrected effectively by means of present-day surgical technics, which enable the patient to breathe satisfactorily without a tracheal cannula. However, when large portions of the cricoid or thyroid cartilages are lost through trauma or perichondritis, it is impossible in many instances to maintain the patency of a newly constructed lumen through the larynx. Moreover, it is not uncommon to encounter a patient who has had a traumatic injury to the neck in which the larynx is detached from the trachea, a defect which results in stenosis and also in paralysis of bilateral vocal

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*Section of Plastic Surgery, Mayo Clinic and Mayo Foundation

**Read at the meeting of the North and South Carolina Societies of Ophthalmology and Otolaryngology, Charleston, South Carolina, September 10 to 12, 1961.

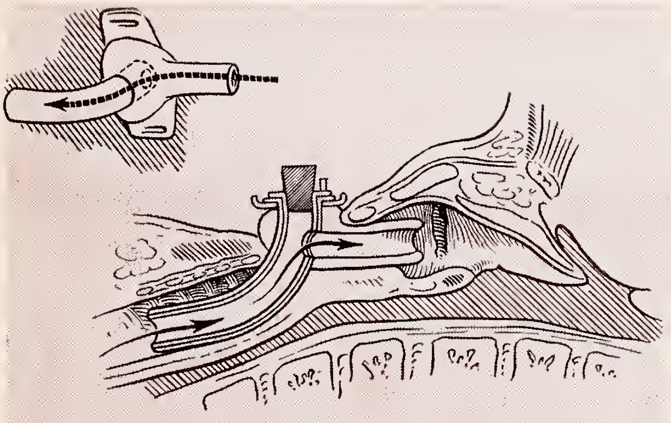

Fig. 2

Fig. 2. Sagittal section of larynx with tracheotomy tube and acrylic appliance in place. The arrows indicate the passage of air from the trachea into the larynx when the rubber cork is inserted into the tracheal tube. Inset: Relationship of acrylic appliance to tracheal tube. When the tracheal tube is corked, the patient breathes normally and can speak without difficulty.

A new device is presented which will aid the patient suffering from stenosis of the larynx and part of the trachea. This specialized tracheostomy tube prevents further scar contracture and permits breathing and phonation through normal channels.

Irreparable Stenosis of the Larynx

cords. In such cases, even though a new lumen is prepared through the larynx and arytenoidectomy is performed, the airway still is inadequate. Under these circumstances, the laryngeal lumen becomes contracted so that the patient is unable to speak and must continue to wear a tracheal cannula.

Laryngeal stenosis which cannot be corrected presents a troublesome problem. In 1956 I reported on the use of a mechanical device which is extremely helpful in such cases, providing that the vocal cords are not obliterated in a mass of scar tissue. This contrivance, which is inserted into the larynx through the tracheotomy opening and is connected to the tracheal cannula, permits the patient to speak normally and also to breathe naturally through the nose and mouth or at least through a valve tracheotomy tube (fig. 1 and 2).

Since this report, I have had occasion to use this appliance in other patients with success.

Lumen for Cicatricial Stenosis

In any patient with cicatricial stenosis of the larynx or upper part of the trachea, regardless of how much of the laryngeal cartilages is lost, I believe that an attempt should be made to prepare a new lumen through the larynx. Briefly, this is accomplished through a laryngofissure, dividing the thyroid and cricoid cartilages in the midline. By separating the cut edges of these cartilages, the underlying laryngeal mucosa and cicatrix can be incised in a vertical direction to expose the interior of the larynx. The scar tissue producing the obstruction then is excised. If the resultant raw surface is large, it is well to graft skin on the area with a thin split-thickness skin graft wrapped around a sponge-rubber mold. A plastic obturator made of one of the dental acrylic materials is then constructed and inserted through the elongated tracheal stoma into the newly prepared lumen through the larynx. This obturator has an extension at its lower end which emerges from the tracheotomy opening above the tracheal cannula. Due to the extension, the obturator is prevented from being dislodged and from slipping down the trachea. If at any time inspection of the larynx seems desirable, the tracheotomy tube and obturator can be removed through the tracheal opening as an office procedure. It has been my observation that in most cases an obturator must be worn for at least 6 months before the newly formed laryngeal lumen loses its tendency to contract.

The Use of a Prosthesis

If all efforts to keep the new laryngeal lumen open are unsuccessful, the device which I wish to discuss in this paper will be found helpful providing that the vocal cords have not been obliterated in a mass of scar tissue. To utilize this contrivance, the tracheotomy opening should be made sufficiently long to connect not only with the trachea but also with the lower end of the contracted laryngeal lumen. The appliance (fig. 1 and 2) consists of a plastic tube which fits into the artificial lumen in the larynx and extends almost up to the vocal cords. At its lower extremity, it has a ringlike extension through which the tracheotomy tube is inserted. A temporary device of rubber tubing and wax is made first; later it is sent to a dental laboratory for processing in one of the acrylic materials.

On completion, the device is introduced through the tracheotomy into the larynx; the ring protrudes externally and is sufficiently large so that the appliance cannot slip into the trachea. After the device is inserted into the larynx, the tracheal cannula is thrust through the acrylic ring into the trachea. A hole in the top of the cannula at the site of contact with the acrylic appliance allows air to pass freely from the cannula through the appliance and consequently between the patient's mouth and the nasal passages above and the trachea and bronchi below.

Appliance for Irreparable Stenosis of the Larynx

If the patient's vocal cords move satisfactorily, a rubber cork is inserted externally to occlude the outer opening of the tracheotomy tube; thus, the patient breathes normally through his

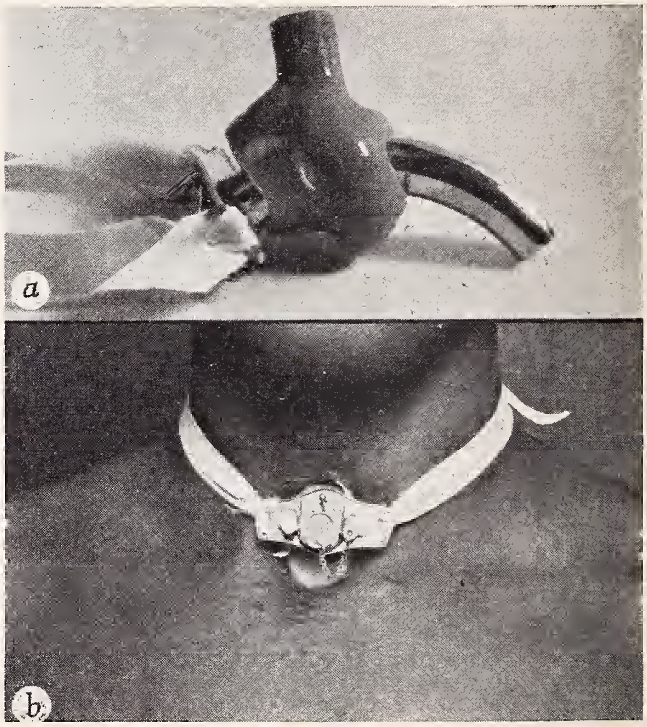

Fig 3

Fig. 3. **a.** Laryngeal stricture due to trauma, with larynx detached from trachea which caused paralysis of bilateral vocal cords with the cords fixed in the midline. The surgically prepared lumen through the larynx would not remain patent so an acrylic device (same as in fig. 1 and 2) was prepared and worn with a valve tracheal cannula. The valve tube was needed because of the paralysis. **b.** Acrylic appliance and valve tracheotomy tube in place. The valve permits the patient to inhale through the tracheal cannula and to exhale through the acrylic device, thus enabling him to speak normally.

nose and throat and air expelled on expiration passes up between the vocal cords and permits the patient to speak normally (fig. 1 and 2). If the patient has bilateral fixed vocal cords, the same appliance can be utilized but the patient must wear a valve tracheotomy tube; this permits him to inhale through the tracheal cannula and to exhale through the acrylic device, thus enabling him to speak (fig. 3).

While no patient is particularly happy to discover that he must wear a tracheal cannula for the rest of his life, still he is pleased with this appliance which allows him to speak satisfactorily. As has been mentioned, it can be used in any patient with an irreparable stenosis of the larynx in which the vocal cords are intact. Whether or not the cords are fixed does not alter the usefulness of this device. One of its most desirable features is its simplicity. It can be inserted and removed for cleansing at any time by the patient himself; it cannot slip into the trachea, and it will last indefinitely.

THE DOCTOR AS PHILOSOPHER

John Locke

John Locke, contributor of empiricism to philosophical theory, was born in Somersetshire, England, in 1632.

After a preliminary preparation he entered Oxford where his studies were first in theology, but his love for scientific speculation attracted him to the study of medicine. His medical practice, however, was brief and sporadic, confined for two different periods to private attendance on the family and in the household of Lord Shaftesbury.

In 1672 he was made secretary of the Board of Trade under Lord Shaftesbury. This position he held with great distinction until 1675 when Lord Shaftesbury resigned. Though he and Lord Shaftesbury were good personal friends the two men were at odds on philosophical issues, and this led, in time, to a parting of the ways.

After discontinuing his medical practice Locke devoted himself almost exclusively to writing, his first book being "Letter for Toleration," in which he pleaded for religious liberty, followed by "A Second Letter of Toleration" in reply to controversy raised by the first.

In the same year appeared "An Essay on Civil Government," with the thesis that in a state of nature all men are free and equal; that no man is by nature sovereign over other men; and, most important, that the sovereign will of the people stands above government. If a government violates the social contract by endangering the security and rights of the citizens, it is guilty of rebellion against the people, who therefore have the right to dissolve the government.

This revolutionary doctrine of Locke has been authoritatively considered to be the most important contribution ever made by a non-jurist to English constitutional law.

It was Locke's "Essay Concerning Human Understanding," however, that established his position in philosophy and provided his greatest contribution—the theory of empiricism—to philosophical thought. It propounded the thesis that at birth the human mind is a blank, a "tabula rasa," on which experience, composed of sensation and reflection, registers as writing on a slate. In Locke's own words: "Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas: How comes it to be furnished? To this I answer, in one word, from **experience**." In short, all knowledge is acquired from without, none derived from within. Locke recognized no such faculty as intuition. This theory has been noticeably present and influential in the extremist modern psychological tenets of Behaviorism: the theory of the blank and plastic infant who can be molded into any type of individual desired, hereditary genes to the contrary notwithstanding.

In 1691 two hard winters of literary toil in London reduced Locke to a state of semi-invalidism. He moved to Essex. In 1696 he was made Commissioner of Trade at a salary of $5,000 a year, which was a princely sum for a philosopher to earn at that time when most of them barely eked out a living. Locke wrote other books at this time: "Rate of Interest," "Coining of Silver," "Essay on Reasonableness of Christianity," and later "Vindications."

John Locke, one of the great figures in philosophy and father of Empiricism, died in 1704, leaving a heritage that was to be a potent factor in shaping modern philosophical theory and practice.

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Many patients die each year from complications of bowel obstruction. The authors present many basic principles for safe and successful management of these difficult cases.

the management of large bowel OBSTRUCTION

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The fabulous advancements in many vital fringe areas of surgery are reflected in the special field of colon surgery. Here the operative mortality has been greatly reduced by the administration of antibiotics, replacement of blood and electrolytes, and by anesthesia as practiced by specialist anesthesiologists. Nevertheless obstruction of the large bowel, whether acute or chronic, continues to be a formidable problem that calls for diagnostic finesse, sound surgical judgment, and an understanding of certain fundamental concepts of, and adherence to, practices in colon surgery.

The *incidence* of large bowel obstruction due to malignancy has been reported as ranging widely between 5 and 35.6 per cent.[2] Obstruction is encountered mainly in patients over 45 years of age; an age group in which malignancy, diverticulitis, and strangulation of the large bowel are the principal precipitating conditions. Less common causes of obstruction are incarcerated hernia, fecal impaction, perforation with abscess formation, adhesions, colostomy, stricture, and megacolon.

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The cardinal *symptoms* are crampy abdominal pain, abdominal distention, obstipation, and vomiting. The onset of symptoms usually is insidious and too often the patient is not thoroughly evaluated before acute obstruction occurs. An exception to this course is the acute onset and progression of symptoms of volvulus. Where the large bowel is concerned, alertness to the signs and symptoms of cancer is mandatory before obstruction takes place. In the presence of rectal bleeding, cancer must be ruled out by all available diagnostic means. A roentgenogram frequently will reveal the site of obstruction by the gas pattern in the colon as shown on the flat plate. A barium enema is invaluable in establishing a correct diagnosis but should not be resorted to in the case of strangulation or acute emergency. Neither should barium be given by mouth in the case of obstruction or of impending obstruction. Impacted barium can rapidly convert a nonobstruction lesion into an acute surgical emergency.[14]

Anatomic Consideration

The wall of the colon is incomplete in the sense that it is not completely invested by the longitudinal muscle coat. It is especially thin between the taenia coli. It readily becomes dilated and may perforate, particularly in the cecum which is the thinnest portion. If the obstruction is partial, the bowel wall proximal to the obstruction is afforded an opportunity to compensate by hypertrophy but when the obstruction is acute and complete, the cecum or the segment of bowel involved as in volvulus will perforate unless timely surgical intervention is instituted.

Intracolonic pressure measured at the time of colostomy for acute obstruction has ranged between 12 and 52 cm. of water and in the majority it was over 23 cm.[7] It has been shown experimentally that rapid distention alone can cause perforation of the cecum at pressures varying from 50 to 100 cm. of water.[12,13] A more significant observation is the occurrence of petechial hemorrhages in the mucosa when 10 cm. of sustained water pressure is exerted on the colonic mucosa; necrosis and gangrene in 28-32 hours at 20 cm. water pressure; and gangrene in 17-20 hours at 40 cm. of water pressure.[7] For this reason it is imperative that colonic obstruction be recognized early and adequate therapeutic measures instituted promptly.

The ileocecal valve is a peculiarly important anatomic feature of the colon. Dennis[4] estimated that 50-60 per cent of colonic obstructions are of a closed-loop type because of competence of the ileocecal valve. On the other hand, Louman and Davis,[8] and Sperling[10] estimated that the ileocecal valve is incompetent in upward of 90 percent. On the basis of our clinical experience and roentgenographic studies we are of the opinion that in the majority of instances the ileocecal valve is incompetent. This may explain why cecal perforation is rare despite the fact that approximately 23 per cent[6] to 28.5 per cent of acute intestinal obstructions in adults have been attributed to obstruction of the large bowel.

Pathologic Consideration

The bacterial content of the large bowel is highly virulent and the toxins elaborated can be catastrophic in effect unless measures are taken to preserve the integrity of the peritoneal cavity. Colonic obstruction presents a peculiar problem and challenge because the routine preparation that is common in elective surgery cannot be instituted. Of necessity the surgical procedure usually is performed in multiple stages with the primary objective of relieving the obstruction at the initial stage. Subsequent measures are instituted to prepare the bowel for the definitive resection. In the case of volvulus with strangulation the trapped fluid in the segment of bowel involved is considered to be highly toxic and care must be exercised to prevent the fluid from reaching and being absorbed by the nonstrangulated bowel.[5]

Physiologic Consideration

Fluid and electrolyte depletion is not a grave problem in large bowel obstruction since vomiting is a late and often only an intermittent development. The main electrolyte lost is sodium which may equal or exceed chloride loss with resultant hyponatremic acidosis. Potassium loss may also be great, requiring parenteral replacement. Since the majority of these chronically ill patients are in the older age group, the chief deficiencies encountered are anemia, malnutrition and hypovitaminosis. Dehydration secondary to anorexia and consequent inadequate fluid intake may also be present. In the case of volvulus with accompanying strangulation loss of blood into the bowel of the involved segment and exudation of plasma into the bowel and peritoneal cavity may be enormous. The loss of integrity of the bowel permits the escape of bacterial toxins through its wall, increasing the seriousness of the disease. These factors bear consideration during the preoperative, intraoperative and postoperative care of the patient.

Malignancy causes obstruction of the left colon eight times as frequently as it does obstruction of the right colon.[13] The apparent reason for this discrepancy lies in the pathologic entities that occur in the right and left side of the colon and in the character of the bowel contents. In the right side the lesions tend to be flat ulcerating carcinomas and, less frequently, fungating carcinomas. The fungating lesion becomes unusually large before obstruction can take place because of the fluid contents of the bowel. In the left side, obstructions readily develop because the lesions tend to be of the constricted napkin-ring type and the bowel contents are formed.

Obstruction caused by inflammatory lesions may be brought about by edema, spasm and stricture of the colonic wall. Obstruction caused by volvulus is due to simple occlusion of the lumen by torsion of the bowel upon itself or from a fixed point at the base of the mesentery. Strangulation occurs with obstruction of the mesenteric blood supply when the twist is more than 180°.[3] Serosal splits or tears may be present from marked distention even before the onset of gangrene.[11]

Management

Success in the management of colonic obstructions in a large measure will depend upon early diagnosis and the institution of the adequate decompressive surgical procedure best suited to the individual case, provided restoration to the minimal physiologic balance has been accomplished. Care in each instance must be individualized and the operation adapted to the patient rather than the reverse.

Operation

The choice of operation is influenced by many factors. The general condition of the patient, the site of the obstruction, completeness or incompleteness of the obstruction, whether it is acute or chronic, and the degree of physiologic alterations are factors to be considered. The surgical procedure must be well planned. In the majority of cases a multi-stage operation will be necessary because relief of obstruction ranks first and must be effected by the simplest feasible procedure. Definitive resection follows in several days or weeks in resectable cases. Any attempt at short cuts or telescoping of procedures may eventuate fatally.

Preparation

Local bowel preparation must be kept at a minimum. Broad-spectrum antibiotics are administered intravenously. Adequate amounts of fluid and electrolytes and vitamins A, B, and C are given. Preoperative infusion of blood and/or plasma may be necessary since many of these patients are chronically ill. In cases of volvulus with strangulation, shock may be present due to loss of large amounts of blood and plasma in the segment of bowel involved and in the peritoneal cavity. Such losses must be replaced preoperatively and intraoperatively.

In large measure the choice of anesthesia will depend upon the condition of the patient. General, intrathecal, or regional anesthesia may be employed. Regional anesthesia is the method of choice in the very ill patient.

Nasogastic Suction

The insertion of a nasogastric suction or of a long intestinal tube has been opposed by some authors. It is our custom to pass the tube during the period of preparation, not necessarily with the intent of relieving the obstruction but with the intention of relieving some degree of general abdominal distention, particularly if the ileocecal valve is incompetent. It tends to minimize the danger of aspiration pneumonia and abdominal distention during and following surgery. It is our considered opinion that its advantages outweigh its disadvantages.

In the final analysis it is important to restore these patients to physiologic balance if mortality is to be kept at a minimum, but good surgical judgment dictates that in the presence of acute complete colonic obstruction, time should not be wasted in achieving the optimum condition of the patient. Fortunately, most obstructions of the large bowel are partial or incomplete, which affords time for the building-up process.

Choice of Procedure

The choice of surgical procedure to relieve the obstruction is of the greatest importance. While cecostomy and colostomy are the two most popular methods of decompression it is wise for the surgeon to have at his fingertips alternate procedures which have proved successful under certain circumstances.

For obstruction of the *right* side of the colon (cecum, ascending colon, hepatic flexure and right half of the transverse colon) the following procedures may be performed with their usual indications.

Cecostomy. Cecostomy is indicated for most obstructions of the right colon. It is a very simple operation. It is effective, and can be readily accomplished under local anesthesia. But if creation of a large cecal stoma is planned or if a tube is used it is important that at least a #28 French catheter be employed, since decompression is the main objective.

Ileotransverse colostomy. Where the ileocecal valve is incompetent, in right colon obstruction, and in the absence of marked distention and edema of the small bowel, ileotransverse colostomy is indicated. It should be the palliative procedure of choice in unresectable carcinomas of the right colon. We do not condone imposing the additional burden of an abdominal stoma upon a patient in hopeless condition. If the ileum is divided, the distal stoma should be exteriorized; otherwise, if closed and dropped into the peritoneal cavity, a closed-loop obstruction is created. Likewise, if the transverse colon is divided, the proximal stoma should be exteriorized. It will facilitate decompression and instillation of cleansing solutions and antibiotics. This method has also made possible resection of seemingly unresectable lesions in the right colon.

Primary resection with anastomosis. Conditions accompanied by embarrassment of blood supply should be treated by primary resection with anastomosis. It is fatal to leave nonviable bowel in the abdominal cavity. Primary resection may be employed also in selected cases of closed-loop and partial bowel obstruction if the condition of the patient permits and the local bowel findings are favorable.

Witzel technic. The Witzel operation is accomplished by threading a # 16 French catheter into the ileum and through the ileocecal valve. It may be the procedure of choice when the ileocecal valve is competent and the cecum is extremely distended, making manipulation very dangerous. This method may then prove safer than the preceding technics and will permit instillation of antibiotics into the right colon. After two or three days, the cecum will have regained its vascularity and tone and an adequate complementary cecostomy can be performed.

Woodhall's method.[15] A side-to-side anastomosis and exteriorization of the divided ends of ileum and colon provide a controlled ileostomy. The operation may be performed in cases of volvulus when a formal hemicolectomy with anastomosis seems inadvisable.

For obstruction of the *left* half of the colon (distal half of the transverse colon, splenic flexure, descending colon, sigmoid and rectum), the following procedures may be performed where indications permit.

Colostomy. Colostomy is indicated for the majority of obstructions of the left colon. The two portions of the colon most frequently used are the proximal transverse colon and the sigmoid colon. In general, it can be said that the nearer the colostomy to the obstruction, the better will it decompress the bowel. But this temporary colostomy may interfere during a subsequent radical resection. In the case of obstruction from diverticulitis, a transverse colostomy will serve also as a complementary vent following the definitive resection, allowing optimum conditions for the anastomosis to heal. For these reasons, a transverse colostomy is our preference.

Some authors prefer sigmoidostomy as a preliminary emergency decompressive procedure for congenital megacolon. Sigmoidostomy is our procedure of choice for unresectable carcinoma of the rectum. A more proximal colostomy would be improper because of the difficulty one encounters in regulating it.

As regards the types of colostomy, we prefer the Wangensteen over the Devine type because of the simplicity of the technic of the former and the difficulty one usually encounters in the subsequent closure of the latter. The glass rod under the bowel is left for 48 hours, after which the bowel is opened. We remove an oval piece from the anterior wall in order to have a wider distance between the proximal and distal stomas, thereby ensuring defunctionalization of the distal loop.

Following this procedure the distal loop is irrigated diligently several times a day with saline solution. Cleansing the bowel may require several days. At the same time, irrigations per rectum are also instituted. Prior to definitive resection, neomycin 1 percent solution and sulfathalidine 6 gm. in 500 cc. solution are instilled by drip into the distal loop. The proximal loop is irrigated also and oral antibiotics administered.

Ten to 14 days following the definitive resection a thin suspension of barium is instilled through the distal loop of the colostomy and the integrity of the anastomosis is visualized by roentgenographic studies. The colostomy is closed if the x-rays are normal.

Cecostomy. We consider that cecostomy cannot completely defunctionalize the colon and for that reason do not advocate its use. If it is performed, it should be adequate in size in order to serve the purpose for which it was created. It should be reserved for very ill patients or where the safe establishment of a transverse colostomy is prevented by technical difficulties.

Resection. Resection may be indicated for obstruction due to volvulus and is mandatory if strangulation is present. Primary anastomosis may or may not be performed depending upon the surgical judgment of the operator. Mikulicz obstructive resection, although seldom performed today, still has a place in certain selected cases.

Internal shunting procedures. An internal shunting procedure may be employed as a palliative procedure in instances of unresectable malignancy whenever it is possible to make an anastomosis between two segments of bowel. For instance, an unresectable carcinoma of the splenic flexure may be bypassed by a colocolostomy of the transverse and descending portions of the large bowel.

Summary

Obstruction of the large bowel is a condition requiring prompt surgical decompression as soon as a minimal physiologic balance has been attained. Usually the operation is undertaken at a time or situation where the bowel is unprepared, necessitating a multi-stage procedure. It is emphasized that one must adhere strictly to certain fundamental concepts and practices in colonic surgery and above all exercise sound surgical judgment if mortality is to be kept at a minimum.

A number of methods of surgical decompression for lesions in the right and left halves of the colon are discussed.

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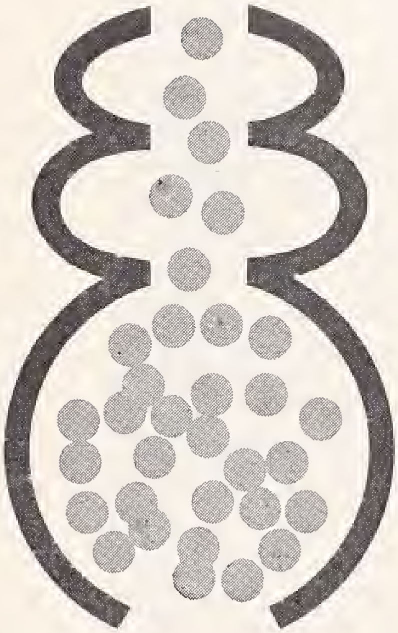

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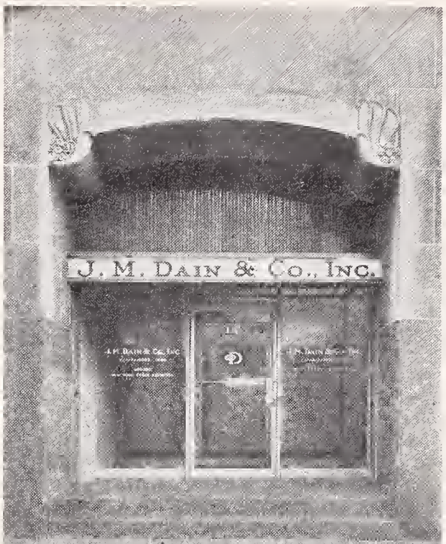

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Editorials

WHY AN ANNUAL MEETING?

Since this issue of MINNESOTA MEDICINE is devoted to advance information on the 109th annual meeting . . . May 21-22-23 in Minneapolis . . . and is mailed to you along with the complete program, this is a question we might all pause to consider . . . and answer.

Tradition . . . the fact that such a meeting has been held every year for the past 108 years . . . might be the most immediate answer that comes to mind. Yes, in part this is the answer. Yet, this year's program reflects a number of changes and innovations . . . symposiums rather than special lectures, emphasis on entertainment at the annual meeting banquet rather than presentation of the traditional "message", informal "fireside conferences" on Monday evening, etc.

Tradition, alone, would not dictate such changes in a continuing effort by your Committee on Scientific Assembly to make the Association's annual meeting of greater value.

No, actually, there are more basic reasons for an annual meeting.

The constitution of the Minnesota State Medical Association declares that the purpose of association shall be "to promote the science and art of medicine . . . elevate the practice . . . foster the presentation of papers, articles, findings and studies" for the information of the medical profession and towards better care of the patient.

Hence, the two and one-half days of scientific program . . . the core of every annual meeting . . . are prescribed not only by tradition, but also by the very purposes of our Association and profession.

More over, the annual meeting culminates yearly the efforts, progress, and, yes, the problems facing organized medicine in Minnesota. Through the meeting of the House of Delegates . . . coordinated with the annual reports and meetings of the council and various committees of our Association . . . we are given a progress report. Through our duly elected representatives, we are given the opportunity to pass judgement on the past and contribute to the future of our Association. The reports of our officers and other co-workers are presented to enable our representatives to help in the formation of policies for the future.

The annual meeting also permits us to honor those members who have labored long and well for the ideals we espouse. It provides an opportunity for new members to become more aware and active in organized medicine.

Finally, the Association's annual meeting gives public evidence to the fact that the medical profession, by cooperative effort, is continuingly working to develop and learn new skills and methods to better serve all patients.

A word or two must be added regarding the exhibits, both scientific and technical, that add to the value of the meeting. The value of the scientific exhibits is easily recognized in the application of the purposes of the Association, as outlined in its constitution.

But the technical exhibits . . . those presenting the products and services of the pharmaceutical and other firms . . . also contribute to the meeting. New developments in drugs and services which assist in the practice of medicine can hardly be ignored if we are truly to better serve our patients.

Such are some of the reasons for an annual meeting for the Minnesota State Medical Association. Hadn't we better plan to attend?

The Editors

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DELINQUENCY PRONE PERSONALITIES

V. Other Delinquency Prone Personalities

Delinquency may occur as a result of situations outside of the individual's personality characteristics. Even so-called normal personalities may become involved in delinquent acts. If one uses the social criterion of adjudication for breakings of laws, then many adolescents, and even adults, who are essentially normal psychologically are delinquent in that through accident, ignorance, or sometimes volitional choice they have transgressed. These people are not medical or psychological problems though they may be social and legal problems. In recent years psychiatry and psychology have sometimes been oversold to the public and to the state, leaving in some minds the thought that *all* persons who appear in court must somehow be mentally disordered and in need of treatment rather than of punishment.

Given sufficient stress, perhaps persons of all personality constellations would become delinquent in some degree. These are temptations that the most normal person finds hard to resist. Under proper circumstances, such as severe privation, one will, if it comes to that, steal rather than starve. If the normal, but immature child is psychologically neglected, he may very well engage in delinquent acts. There are those with glib answers to the world's problems who would blame parental neglect or irresponsible supervision for *all* child delinquency. The truth is some parents are responsible for some of their children's misbehavior. These are parents whose own psychological state is tenuous or inadequate; there are others whose economic deprivation and large family responsibilities make adequate supervision and training difficult. Children from such families, often living in deteriorating neighborhoods, are subjected to warping neighborhood influences. In some cases the modal adjustment of the neighborhood is delinquent. A boy in such a situation may seek to associate himself with delinquent gangs not so much because he is anti-social but because he is social. Such boys gain their values in a corroding atmosphere of hate and deprivation. The solutions to these problems of delinquency lie in areas of economic development, public health measures, and educational opportunities. As long as these delinquency producing social and psychological conditions exist, children growing up in them must surely frequently become contaminated. The family cohesion must be very strong indeed, as it very often is, to withstand the subversion created by an omnipresent deleterious environment on immature minds. Despite the asocial influences, especially in some crowded urban areas, a surprising majority of persons living in these circumstances do not become delinquent. When they do, it is important for the court to make a serious calculation for their welfare. It is well known that the influences in understaffed, overcrowded, and inadequately equipped detention and correction centers may produce greater psychological damage than they prevent by removal from a poor community atmosphere. The important discrimination for the court to make is the degree of effectiveness of the home as opposed to an institution.

With the rapid urbanization of our society, the environmental opportunities for delinquency have markedly increased. The single greatest category of criminal behavior involves traffic offenses. The wide accessibility of the automobile has contributed enormously to the problems of delinquency control. Indeed, if one subtracts the number of traffic offenders from the total crimes committed by adolescents, the alarming acceleration in youthful delinquency does not look nearly so frightening. On the other hand the substantial damage to life and property visited upon society by carefree adolescents at the wheel of a lethal vehicle is frightenly obvious from insurance company statistics. With the continued rapid expansion of our population, the problems of space and of unhealthy interaction among teenagers will become an increasing problem. Some degree of nonconformity is natural to this age period and we must provide facilities and leadership to channel the normal exuberance of youth into constructive—or at least harmless—activities. Many youngsters break the law not because they are anti-social but because we have not provided

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sheltered opportunities for work and play. It is unreasonable to suppose that the parents of an adolescent can provide these things in a crowded city apartment. And the cities are getting larger; and the suburbs are turning into cities with all of their urban problems, including accelerating delinquency rates.

While we would emphasize the calumny of accusing all parents of fundamental guilt and negligence for teenage crime, there is another group of delinquents whose behavior may be directly traced to their parents' unconsciously criminal instincts. These are the parents first described by Johnson and Szurek(1). These parents are themselves overtly law abiding. But because of neurotic conflicts they have repressed enormous feelings of hate and resentment for authority figures. In the depths of their own personalities, they reject rules and morality. To gain distorted satisfaction of their hostile needs they subtly influence their children toward delinquency and are thus vicariously satisfied. While protesting their disapproval of delinquent acts, they actually reward and reinforce them in their children. These are the parents who encourage the child to say that every failing is due to others. These parents say "don't be bad" but then "boys will be boys, and though I'd hate for Junior to know it, his little trick was really awfully cute and I'm sure he didn't mean any harm." Treatment for these boys and girls is almost certain to fail unless there is treatment for the family. As adults, these individuals have severe character problems, make poor managers and do poorly in their occupations.

In this article we have described sources of delinquency not directly ascribable to pathology solely within the individual delinquent's personality. Some of these involve family problems; others involve larger social problems. Their solution requires help for some families and help for broader community problems.

VI. How Can the Physician Contribute to Delinquency Control?

In the preceding five articles we have discussed various sources which together produce delinquency prone personalities. As individuals many of these cases appear in the office of their physician. Often they are brought in by distraught parents. The physician has a social responsibility to his community as well as a professional responsibility to his patients. In meeting both of these responsibilities he may contribute to the total problem of delinquency control.

In the first place, it is often the family doctor who knows the family and neighborhood situation best. Of all professional persons, it is he who is most informed about a child's total history. Almost all physicians have tight schedules and too often they do not spare time to talk with parents and children and thus do not have facts that they alone might obtain before delinquency occurs. We spent some time describing the behavioral biography and personality characteristics of the sociopath. Because of their impulsivity and poor judgment, these people have more than their share of injuries, and they inflict more than their share on others. In these cases it is important for the doctor to learn what the interpersonal situations were which preceded such injuries and what psychological attitudes followed. If the physician sees a budding sociopath, he may be in a strong position to advise parents concerning the need for setting limits, for providing supervision, for intensifying training, for expecting low achievement.

Treatment of the sociopathic character is similar to that of many chronic illnesses; in these cases the pathology is in the individual's behavior. Their development needs to be watched and management is called for over a period of years. In observing the course of the patient's personality development, the physician will find some situations which appear to exacerable the problems of impulse control, and he can sometimes foresee these and help the person avoid them. He will find some age periods to be more active; during the post-pubertal years, for example, the adolescent is more likely to display injudicious behavior, but the sociopath is more extreme than the average youth. Sociopaths have retarded psychological maturation. In viewing a span of years, the physician can better predict the rate at which parents and society might expect to be able to permit greater independence in decision making.

If the physician is presented with one of these cases, he will want to determine whether he thinks it best to take on the long term care of the family or wishes to refer them. When taking on

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such a case, the doctor will want to have time to devote to listening. Probably the single most effective technique of psychotherapy is that the doctor is someone who will listen, who will try to understand, and who is interested in hearing the patient's ideas and feelings. Because of the sometimes distressing attitudes and activities of the sociopath, it is difficult to advise without seeming to moralize. If one is to be of help, it is important to remember that patients with personality problems must feel secure in the belief that the doctor is really working in his best interest, and it is therefore wise to spend a long time listening before, if ever, giving advice in a directive way. Perhaps because of their own lack of scruples, the sociopath is nearly always suspicious of the motives of others.

Because the physician will wish to refer some cases, he should be familiar with the local resources in terms of medical and psychological specialists, mental health centers, social agencies, private schools, youth groups, and court services.

Delinquency arises in some cases when the parents subtly influence its occurrence. These nuances will not be observed by the doctor who does not elicit—nor hear when volunteered—the parental attitudes. He must be conscious of possible social and psychological pathology to perceive these disorders when they occur. It is all too easy to reassure the parents and one's self that asocial behavior will pass away and need not be taken seriously. It may be very serious. If the doctor sees the sort of undermining of moral values described in the type of case presented in the last article, he will know that the whole family, not just the child, has neurotic problems and are in need of counseling.

Much has been said in the last two decades concerning permissiveness in child rearing and the guilt due parents for the offenses of their offspring. The physician can do much when these psychological influences have been misunderstood. He can help parents see the value of maintaining limits; see the need for a structured environment for children; see the difference between flexible and laissez-faire child rearing; see the value in psychological comfort for children when parents assume proper control. The eminent child psychiatrist, Leo Kanner, correctly emphasized that parents, too, have rights. The physician can help in eliminating unrealistic and undeserved guilt in some parents, while reinforcing the need for more responsible action with other parents. To make this discrimination he must be able to find time to talk with his child and adolescent patients and their families. And he must be able to recognize warning behavioral symptoms.

The physician does not always think of psychiatric or neurological factors even when an individual is referred because he is a behavior problem or because he is socially isolated. Careful diagnostic study may identify the latent schizophrenic, the minimal brain damage, the mentally retarded, the compelled versus the impelled thief, and so on. Such diagnostic studies may require consultation or referral. With the growth of mental health centers and increase in private practitioners in the fields of psychiatry, neurology, and clinical psychology, referral sources are increasingly available. When the physician makes a diagnosis of one of these disorders, he will know that his recommendation must be directed toward the medical problem involved and that delinqency will be controlled if he can treat the more basic pathology. If the physician determines that consultation is necessary to help confirm a diagnosis, or referral is indicated for psychotherapy, he can help the family accept the need for such additional professional assistance. Many people still feel anxiety and embarrassment about seeing a psychiatrist. More than anyone else, the family physician can help overcome these medieval suspicions.

But much of what the physician can do to help delinquency control does not directly relate to his medical practice. As a private citizen, he can lend his prestige and skill to community organizations, youth groups, social agencies, and others working toward programs of delinquency prevention and control.

Robert D. Wirt, Ph.D.
Peter F. Briggs, Ph.D.
Jules Golden, M.D.
Center for Personality Research
University of Minnesota

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases “Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease.”[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis “It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . .”[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases “Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult.”[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition. J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] “Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . .There is some evidence of interference with normal riboflavin utilization during catabolic episodes.”[9]
8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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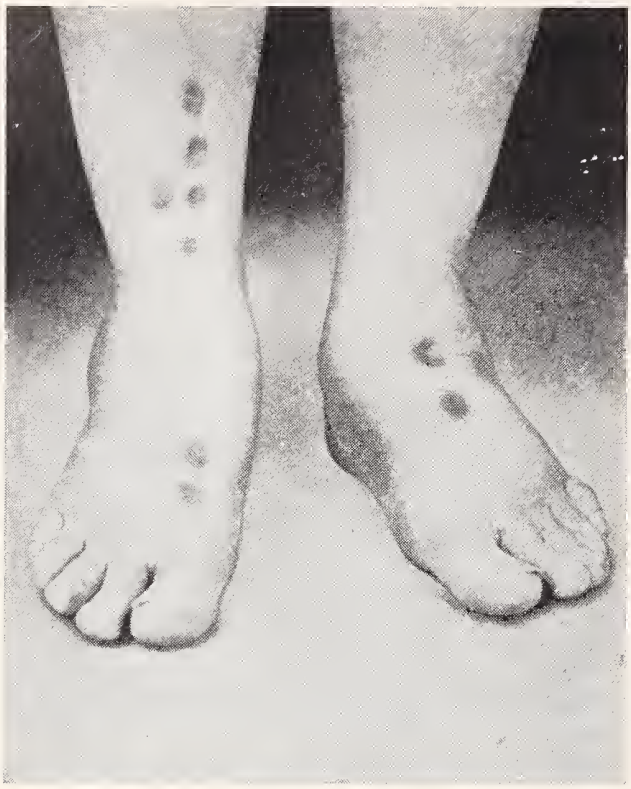

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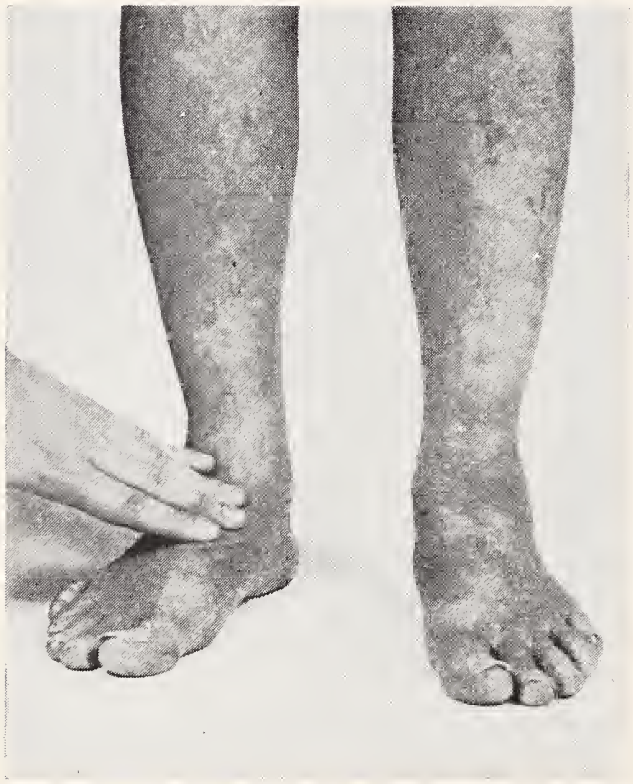

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Abstracts and Briefs

TREATMENT OF BLEEDING VARICES

The authors report an experience with forty-two patients representing less than fifty percent of patients with cirrhosis and major bleeding from esophageal varices seen in a twelve year period in St. Luke's Hospital in New York. These patients were considered suitable operative risks after evaluation. One-half of these deemed suitable were subjected to porta caval shunt and one-half were treated conservatively. In the non-operative group, thirteen of the twenty-one died within one year of the first major hemorrhage. Two more died in the second year. Of the operated group 76% survived more than one year, four dying in the second year, leaving a two year survival of 57% as compared to the 28.5% of the comparable cases treated medically for a two-year period after their first major hemorrhage from esophageal bleeding.

The authors also noted that the presence of ascites strikingly influenced the mortality rate, so that in the presence of ascites 65.7% died with the first major hemorrhage while only 27% died of the similar episode without ascites.

Further statement indicates that four patients who had prophylactic shunts without any history of bleeding have all remained well, one for four years and two for two years, the remaining one a one year follow-up.

Various views have been presented in the comparison of non-operative versus operative treatment of the portal hypertension esophageal bleeding, this paper adding reasonable supportive evidence for the benefit of properly chosen procedures.

J. H. Strickler, M.D.
Minneapolis, Minnesota

"Cirrhosis of the Liver and Bleeding Esophageal Varices, A Comparison of Operative and Non-operative Treatment" Edmunds, R., and West, J. P.; Ann. Surg., 154:41, July, 1961.

OPHTHALMODYNAMOMETRY

A method is described whereby the effectiveness of the ophthalmodynamometer can be enhanced.

Ophthalmodynamometry in normal cases measures the internal carotid artery pressure on the homolateral side. It has been reliably demonstrated that about 25 per cent of the cases with internal carotid artery occlusion have equal retinal artery pressures in both eyes.

The authors attribute these equal pressures to effective collateral circulation primarily from the homolateral external carotid, the contralateral internal carotid and the basilar artery.

Compression of one of the carotid arteries in normal cases causes a decrease in the homolateral retinal artery pressure and an increase in the contralateral retinal artery pressure.

Compression of the common carotid artery on the side of the thrombosed internal carotid artery caused only a slight drop in the retinal artery pressure on that side. Compression of the contralateral common carotid in this case caused a marked drop in the retinal artery pressure of both eyes.

The authors state that the radial artery pressure should be checked simultaneously. Caution is urged regarding compression of the collateral circulation in cases of complete occlusion of one internal carotid. The possibility of stimulation of the carotid sinus with a concomitant fall in systemic arterial pressure should also be kept in mind.

This article describes a method where the number of false negative ophthalmodynamometric readings can be reduced. I feel that the authors' views are valid and useful if one keeps the hazards in mind.

Ernest J. Larson, M. D.
Minneapolis, Minnesota

"The Role of the Carotid Compression Test in the Diagnosis of Internal Carotid Artery Thrombosis." Swietliczko, I., Szapiro, J., and Polis, Z.; Am. J. Ophth. 52:6, December, 1961.

GASTRIC ULCER

In addition to the usual indications for surgical intervention in the management of gastric ulcer (perforation, hemorrhage, obstruction, possibility of malignancy) the authors have followed the policy of recommending surgery for gastric ulcers which have not completely resolved in an intensive three week program of hospital ulcer therapy. Apparently, they were criticized as being too radical in this policy by some of their associates. Therefore, they decided to review their experience with this lesion in order to intelligently manage subsequent cases.

During the ten year period of 1947 through 1956, 250 patients with gastric ulcer were admitted to Temple University Medical Center. Of the 166 cases in which a tissue diagnosis was established, 12 or 7.2% were malignant. The series, of course, excludes any obvious gastric carcinomas. All non-operated cases were presumed to be benign.

Various clinical aspects are analyzed and discussed. Some of those to be emphasized are as follows: Gastric ulcer may be a very chronic disease. Even the malignant ulcer may have symptoms of long duration prior to therapy. Gastric analysis is considered a very helpful test. It not only determines the ability of the gastric mucosa to secrete hydrochloric acid, but also indicates the extent of retention if present, and often discloses the presence of bleeding. Gastroscopy, on the contrary, is regarded as unreliable and of potential risk. Roentgenology remains the best clinical tool. It establishes the presence or absence of abnormality. If a lesion is present the x-ray shows the location, size, and probable pathological nature. The radiologist should not, however, be expected to make a histological diagnosis.

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The overall mortality of 151 patients undergoing surgery was 5.1%. Four of the eight deaths were in patients with acute bleeding.

Of the unoperated patients, only 30% remained symptom-free.

The concluding discussion cites abundant statistics from other series to substantiate the impression that gastric ulcer is subject to chronicity and recurrence. The authors believe that gastric resection is indicated for the majority of cases.

Management of gastric ulcer remains a controversial problem. The review under consideration suggests the advisability for utilization of resectional therapy earlier for more patients. Perhaps a reasonable approach would be combined supervision by a surgically aggressive generalist or internist and a conservative surgeon.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"The Clinical Course of 250 Gastric Ulcer Patients" De Laurentis, D. A., and Rosemond, G. P.: Arch. Surg. 83:50, Nov. 1961

RESPIRATORY TRACT BACTERIA

Laurenzi, Potter, and Kass have published a careful study of the bacterial flora in the pharynx, the trachea, the bronchi, and in expectorated sputum of individuals with and without chronic bronchitis. First a swab from the pharynx was obtained for culture; next, freshly coughed sputum was collected, and finally secretions from the trachea and bronchi were aspirated through a bronchoscope especially designed to exclude contamination from the upper respiratory tract. In this manner specimens were obtained from 10 individuals without bronchopulmonary disease and from 42 patients with chronic bronchitis. The criterium for the diagnosis of chronic bronchitis was a productive cough which had persisted for several years. None of the patients were febrile or clinically ill at the time of the examination, and they had not received antibiotics for at least two weeks. However, 23 of the patients with chronic bronchitis had bronchogenic carcinoma, 5 had pulmonary tuberculosis, 2 had bronchiectasis, 2 had slowly resolving pneumonia, and 2 had undiagnosed peripheral lung lesions; 8 patients had nothing more than a chronic productive cough.

The authors classified the bacteria which they recovered into two broad categories: "potential pathogens" and "oropharyngeal commensals." Potential pathogens found were: Diplococcus pneumoniae, Haemophilus influenzae, Coagulase-positive Staphylococcus aureus, Streptococcus haemolyticus, and Coliform gram-negative rods. Diphtheroids, the Neisseria group, Streptococcus viridans and other non-hemolytic cocci, and Coagulase-negative Staphylococci were classified as oropharyngeal commensals.

Oropharyngeal commensals were found in all specimens of sputa, pharyngeal swabs, and tracheal secretions. Of the 10 patients without bronchopulmonary disease, 8 had potential pathogens in the pharynx, 7 had potential pathogens in the sputum, and 4 had potential pathogens in the tracheal secretions. Of the 42 patients with chronic bronchitis, 85 percent had potential pathogens in the pharynx, 67 percent had potential pathogens in the sputum, and 45 percent had potential pathogens in the tracheal secretions. D. pneumoniae was found in 73 percent of the specimens, H. influenzae in 49 percent, coagulase-positive Staph- aureus in 44 percent, coliform rods in 27 percent, and Str. haemolyticus in 5 percent.

The bronchial secretions of the 10 patients without bronchopulmonary disease were sterile; both, oropharyngeal commensals and potential pathogens were absent. In contradistinction, the bronchial secretions of 33 of the 42 patients with bronchopulmonary disease contained bacteria. An abundant bacterial flora was found in the bronchial secretions of all 8 patients with uncomplicated chronic bronchitis, in the bronchial secretions of 18 patients with bronchogenic carcinoma, and in the bronchial secretions of 7 patients with bronchiectasis, slowly resolving pneumonia, or tuberculosis. The bronchial secretions of 5 patients with bronchogenic carcinoma confined to the periphery of the lung, and of 3 patients with tuberculomas were sterile.

All 33 specimens of bronchial secretions which grew out bacteria contained oropharyngeal commensals, and 21 contained potential pathogens. D. pneumoniae was found in 16 specimens, H. influenzae in 11, coagulase-positive Staph. aureus in 8, coliform rods in 3, and Str. haemolyticus in 1. In 9 of the 21 patients a potential pathogen was found in the bronchial secretions which was not isolated from expectorated sputum; in 4 cases the pathogen isolated from bronchial secretions but not from sputum was H. influenzae, in 2 cases it was D. pneumoniae, in another 2 cases coagulase-positive Staph. aureus, and in 1 case Str. haemlolyticus.

The study demonstrates striking differences between the bacterial flora of the pharynx and sputum on the one hand, and the bacterial flora of the bronchi on the other, in the same patient. The fact that normal bronchi do not harbor bacteria has been known for more than half a century. There are potent antibacterial factors operating in normal bronchi to keep them sterile. The existence of these factors has been demonstrated experimentally in mice; following inhalation of aerosols containing staphylococci, the lungs of these animals become sterile again within 6 hours.

Infections of the lower respiratory tract are certainly very common. Chemotherapy has done much to decrease morbidity and mortality from these diseases, particularly in their acute forms. Excluding persons with malignancies, tuberculosis, or fungus infections, there is still a large number of patients with prolonged or recurrent illness of the lower respiratory tract. Their management is apt to be fraught with uncertainties which are difficult to overcome. Among the uncertainties is the nature of the bacterial flora in the bronchi. Many physicians have been oriented toward the use of sputum cultures as a guide to the treatment of these patients with antibiotics. The studies reported here suggest that the results of sputum cultures, even under optimal conditions, must be interpreted with great caution. The overall incidence of common pathogens in expectorated sputum is much greater than the incidence of these organisms in the bronchi. On the other hand, pathogens present in the bronchi frequently are not expectorated.

There clearly is a need for methods simpler than bronchoscopy and more reliable than sputum cultures to assess the bacterial flora in the bronchi. Equally intriguing is the nature of the mechanisms which keep normal bronchi sterile. Knowledge in this field is only rudimentary. As is true of many good investigations, the one of Laurenzi, Potter, and Kass poses more questions than it answers. The answers promise to have much practical value.

Henry S. Bloch, M.D., Ph.D.
Minneapolis, Minnesota

"Bacteriologic Flora of the Lower Respiratory Tract" Laurenzi, G. A.; Potter, R. T.; and Kass, E. H.; New Engl. J. Med. 265:1273, 1961.

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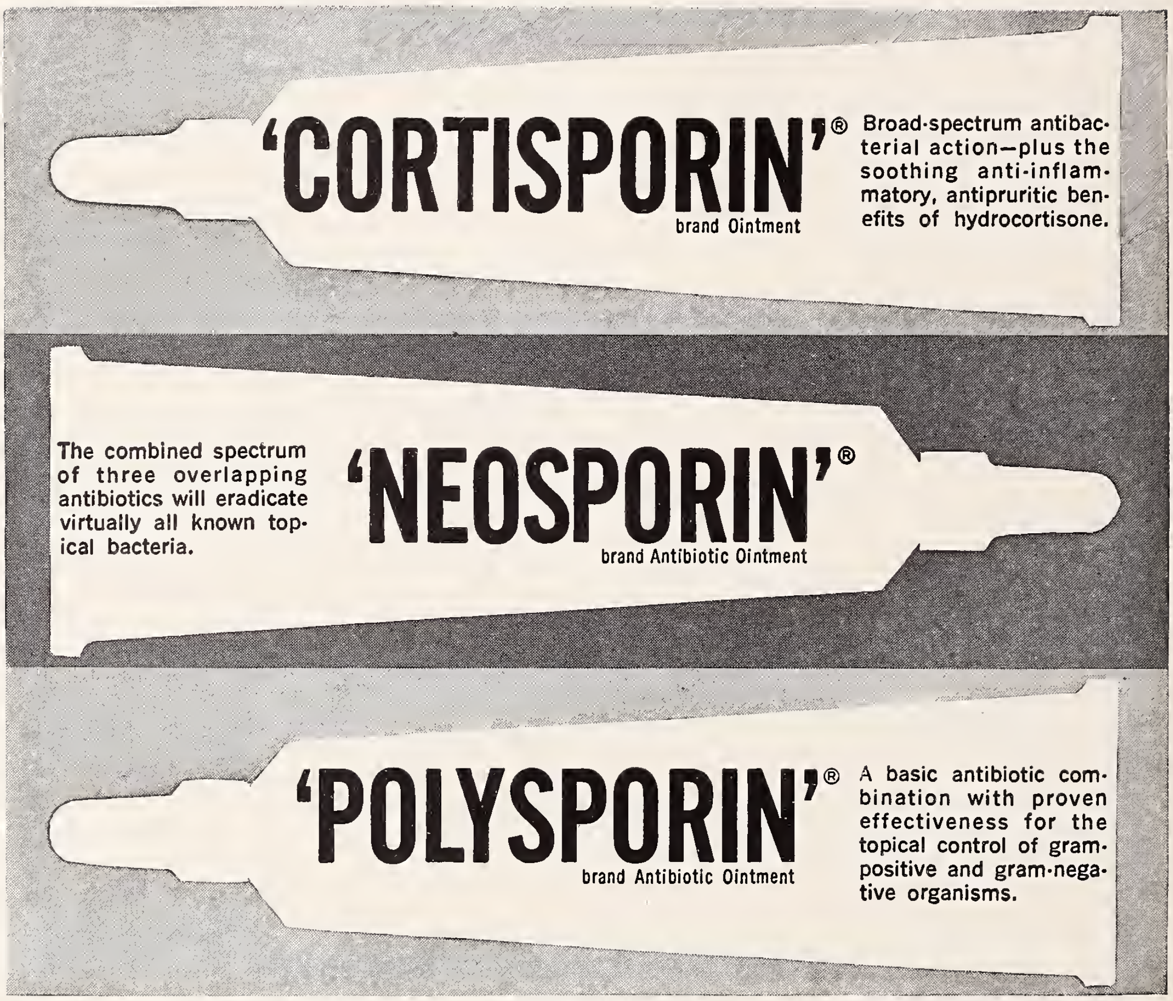
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ULCERATIVE COLITIS IN CHILDREN

Recent reviews of chronic ulcerative colitis in adults reveal many controversial aspects of treatment. The Mayo Clinic group decided to assess their experience with chronic ulcerative colitis in children, particularly in regard to survival rates and the incidence of carcinoma of the colon.

The diagnosis of chronic ulcerative colitis was established in 427 children under 15 years of age in the years 1918 through 1959. Adequate follow up was possible in 401 patients. Of these, 112 patients were known to have died. Carcinoma of the colon was the cause of death in 40 patients, and 57 of them died from other causes related to chronic ulcerative colitis.

Survival rates were computed by actuarial methods. The survival rate at 20 years for children with ulcerative colitis was 58.9% compared to 97.9% for normal children.

Deaths from carcinoma of the colon occurred 556 times more often in patients who acquired ulcerative colitis in childhood than would be expected in normal children. The mean interval of time between diagnosis of ulcerative colitis and death from carcinoma of the colon was 14.8 years.

At the time of follow up 126 patients were considered asymptomatic. Complications other than carcinoma were arthritis, pyoderma gangrenosum and hepatic disorders.

Although a large center like Mayo Clinic probably has a disproportionate share of the most severe cases, the data presented are still rather alarming. Since colon resections for all children with ulcerative colitis would hardly be feasible, one can only conclude that in our present state of ignorance, a careful program of frequent follow up is essential. Perhaps extended duration of the disease must be added to the mandatory indications or colectomy in the attempt to prevent the lethal complications of chronic ulcerative colitis.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"The Prognosis of Chronic Ulcerative Colitis in Children" Michener, W. M., Gage, R. P., Sauer, W. G., and Stickler, G. B.; N. E. J. M. 265:1075, November 30, 1961.

RENAL RESPONSE TO ACIDOSIS

The authors have set up a study to determine effects of electrolyte-containing and electrolyte-free intravenous solutions on renal response to acidosis. These observations were obtained in dogs, made acidotic by ammonium chloride administration during infusions of either Ringer's lactate or 5% glucose in water. Mannitol was employed as an osmotic diuretic, thus allowing a study of the hydrogen ion and free water excretion when increased amounts of sodium were made available for ionic exchange, even though there might be a coexistent hyponatremia.

It was found that an acute dilutional hyponatremia occurred in all dogs receiving 5% glucose in water solution and the metabolic acidosis produced by ammonium chloride was more severe and prolonged than during the administration of Ringer's lactate solution. The urinary hydrogen ion excretion and free water clearance were impaired in dogs receiving 5% glucose in water.

In a second experiment operation was superimposed upon the metabolic (ammonium chloride) acidosis. Tissue anoxia and peripheal circulatory collapse and hypotension of operation tend to shift the pH of the blood in the acid direction during operative procedure. This likely occurs by accumulation of fixed acids displacing bicarbonate and other buffer ions. It was found that the blood pH tended to return rapidly to the control level in the operative group receiving Ringer's lactate solution, whereas it remained severely depressed in the operative group receiving 5% glucose and water. The inability of the kidney to excrete dilute urine despite hypotonicity of the serum due to antidiuretic hormone production and a greater failure of glomerular filtration rate in the glucose and water group were present in the states of sodium depletion.

Metabolic acidosis was found to be more severe in the operated animals than the unoperated group. This, however, tended to correct itself in animals receiving Ringer's lactate but was prolonged in the group receiving 5% glucose and water.

A more severe acidosis was produced in both groups of dogs during operation. Progressive hyponatremia occurred in the operated glucose and water group as a result of dilution of extracellular fluid volume by the administered water and impaired water excretion due to a strong antidiuretic tendency unopposed effectively by the rate of solute excretion. Impaired hydrogen ion excretion in the hyponatremic animals is a consequence of decreased filtered sodium load and perhaps also preferential excretion of potassium in place of hydrogen ions. No limitation of hydrogen ion and water excretion during operation is seen in the operated group receiving Ringer's lactate. Thus it is concluded that operation interferes further with hydrogen ion excretion in the hyponatremic animal by decreasing the delivery of sodium to the distal ion exchange site.

An acute respiratory acidosis of two and one-half hours was produced in a group of dogs during continuous intravenous administration of either Ringer's lactate or of 5% glucose and water. Both solutions were administered with 5% Mannitol and then observations were made when operative trauma was superimposed upon the acute respiratory acidosis. A progressive hyponatremia was noted in the glucose and water dogs. Serum potassium was elevated in all dogs in proportion to the degree of acidosis. A surgical trauma superimposed had no discernible effect in the dogs receiving Ringer's lactate except for transient reduction in sodium excretion. The glucose and water group had a greater degree of hyponatremia in the presence of decreased urinary sodium and water and a higher elevation of serum potassium.

It was concluded that the administration of Ringer's lactate solution during acute respiratory acidosis permits greater hydrogen ion excretion by the kidney and, therefore, greater conservation of bicarbonate bound base than does administration of 5% glucose and water. Surgical trauma produced no further changes in this response.

This very thorough set of studies of the renal response to acidosis during anesthesia suggests a value to the use of a polyionic solution such as Ringer's lactate. Adequate sodium availability is important as a means of preserving a homeostatic state of surgical physiology during anesthesia. These studies appear to suggest caution in the use of only glucose and water solution, particularly during prolonged and extensive surgical procedure.

J. H. Strickler, M.D.
Minneapolis, Minnesota

"Renal Response to Acidosis During Anesthesia and Operation" Parts I, II, and III. Hutchin, P., McLaughlin, J. S., and Hayes, M. A.; Ann. Surg., 154:9, July, 1961 and 154:145 and 154:161, Aug., 1961.

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Book Reviews

RELIEF OF SYMPTOMS — Second Edition. Walter Modell; Publisher, C. V. Mosby Co.

This book is in three parts entitled "Theory," "Practice," and "Counsel." It is well written and quite easy to read. The author has obviously given much thought to the subject of relief of symptoms and has organized his thoughts and philosophy very carefully. Considering the enormity of the subject, the book covers a tremendous amount of material, discussing, as it does, 27 symptoms and their relief. There are, however, certain important omissions noted by this reviewer, such as the use of hypnosis for relief of symptoms, any recognition of fibrositis which is an extremely common cause of pain, and the use of steroids injected into joints, etc., for symptom relief.

In the preface the author candidly states that the book does not represent original material and that "much in this book is self-evident and old hat." He does not intend the book to be a source book or a heavy textbook. Rather, he directs the book largely to medical students and recent graduates. This reviewer agrees that younger physicians would most benefit from reading this book, but also feels that many experienced physicians would find material of interest in some of the chapters.

Samuel M. Reichel, M. D.
Minneapolis, Minn.

STRONG MEDICINE, Blake F. Donaldson, M.D. Doubleday & Company, Inc. 245 pages. $3.95.

In this unorthodox book, "Strong Medicine," Dr. Donaldson's main thesis is: let animals convert plant food into protein; then eat the animals. This sounds logical, but it makes the reader wonder: where do vitamins and minerals come in—or have they gone out?

Preceding his exposition of his revolutionary theory Dr. Donaldson relates in a lively and entertaining style some of the significant highlights of his earlier life. Though his 'Mither' had destined him for the ministry, medicine was indicated when at the age of eleven, he demonstrated his aptitude and ingenuity in a household crisis. One of the family pups had got a needle stuck crosswise at the base of his tongue, whereupon young Blake seized two pliers, gripped both ends of the needle, broke it in two, and neatly extracted both halves. From then on it was neither theology nor law but medicine for him.

If, as an obese victim of heart disease, high blood pressure, osteoarthritis, gall stones, hardening of the arteries, or diabetes, you were to consult Dr. Donaldson for treatment, he would undoubtedly put you on the following regimen: a 30 minute non-stop walk before breakfast, 3 meals a day consisting of fresh fat meat (without salt) and black coffee, 6 glasses of water between meals—and nothing else unless and until you showed radical improvement.

If your complaint were due to an allergy, your diet might be similar to the above but inclusive of a few more items, always exclusive, however, of the Big Bad Seven: milk, cream, ice cream, eggs, cheese, chocolate, and flour—with alcohol also eliminated for good measure.

"Strong Medicine" is strong medicine indeed, and obviously for strong-minded patients only.

Carl O. Rice, M.D.
Minneapolis, Minn.

BIBLIOGRAPHY OF MEDICAL REVIEWS, Volume 6, Cumulation, 1955-1961, available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at $3.50 per copy.

This book is a valuable resource for anyone looking for a recent review article on any of 21,000 medical subjects. Its use will save much time in reviewing the literature on any disease or research problem. This volume appears to be a must for the medical library of the hospital, clinic or medical group and may interest many practicing physicians.

Warren J. Warwick, M.D.
Minneapolis, Minn.

THE COMPLEAT PEDIATRICIAN Eighth Revised Edition. Wilburt C. Davison, M.D., Jeana Davison Levinthal, M.D. Published by Duke University Press, Durham, N. C., 1961.

The Compleat Pediatrician is a classic reference text for "general practitioners, pediatricians, interns, and medical students." This eighth revised edition which has been purged of obsolete material and stuffed with new facts and reports of progress gives us to hope that future revised editions will continue to appear.

Nothing in pediatrics is too rare or too commonplace to escape the author's attention. Its small size and enormous content may frighten the fearful but those who have the courage to read one page of instructions will find the book simple to use.

The section on drug therapy would be improved if all oral and parenteral doses were given on a milligram per kilogram basis. Gram for its 591 grams and dollar for its $4.50 price, there are few books as informative as the Compleat Pediatrician.

Warren J. Warwick, M.D.
Minneapolis, Minn.

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Special Article

"Packaged" Drugs Court Decision Explained

Sale of certain so-called "packaged" drugs and medicines by supermarkets and other unlicensed outlets was recently declared illegal by the Minnesota State Supreme Court. The decision reversed a 1960 ruling by Judge William C. Larson, Hennepin County District Court, in a case brought by the Minnesota Pharmacy Board, joined by the State Pharmaceutical Association against Red Owl, Inc., a food chain and Groves-Kelco Inc., a wholesale distribution firm.

At that time, Judge Larson held the defendants could continue selling the 18 products involved under a provision of the Minnesota Pharmacy Act which exempts from regulation "harmless, non-habit forming proprietary drugs and medicines." The high court rejected this interpretation and suggested that the term "proprietary" has become obsolete and meaningless as currently applied to products of this nature. The 18 items involved in the case were Anacin, Bromo Seltzer, Bufferin, Murine, Lysol, Pinex, Vick's cough syrup, Ex-Lax, Feenamint, Sal Hepatica, Castoria, Vatro-nol, Aspergum, Aspirin compound tablets, Bromo Quinine, Four-Way Cold Tablets, and Pepto Bismol.

The Supreme Court did, however, uphold the Hennepin County District Court decision which ruled that criminal procedure rather than injunction was the proper method of dealing with violations.

The opinion, written by Justice Murphy, quoted at length from expert medical testimony presented during the trial, which described the deleterious effects of the ingredients contained in the products. Justice Murphy concluded, "We are dealing here not with harmless folk remedies, but with complicated drugs having toxic ingredients."

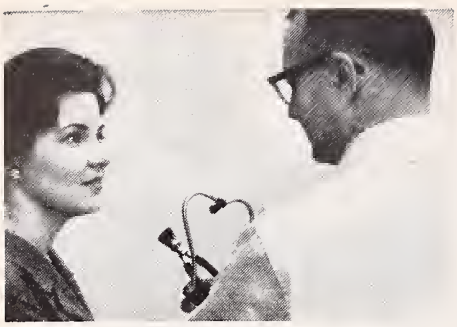
The option also gave strong emphasis to the role of the pharmacist as a protector of public health in the sale and distribution of drugs and medicines.

"The fact that these drugs are sold by a licensed pharmacist is a warrant as to their quality. . . . If all controls were suspended over the sale of such drugs and medicines, it may be assumed that the doors would be opened to the sale of new competitive trademark products, including those drugs, medicines and vitamins which might in an uncontrolled market expose the public to great injury."

The Court also cited expert testimony questioning the proprietary nature of the 18 products. In the trial Dr. Thomas B. Magath, chief of the Division of Clinical Pathology, Mayo Clinic, and Ole Gisvold, Ph.D., professor in pharmacology, University of Minnesota College of Pharmacy, testified the products could be readily duplicated in the laboratory without reliance on secret information. This was contrary to testimony presented by the defense contending that trade secrets were involved in the manufacture of these products. The Court stated that: "The reputed medical value of the proprietary which lay in its mystique can no longer stand the test of medical scrutiny."

Following the decision, the Board of Pharmacy announced that denial of injunctive powers means it will be necessary to "prosecute each and every case as a separate criminal action."

End



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*Gamble, C.J.: Am. Pract. & Digest. Treat. *11*:852 (Oct.) 1960. See also Berberian, D.A., and Slighter, R.G.: J.A.M.A. *168*:2257 (Dec. 27) 1958; Kaufman, S.A.: Obst. and Gynec. *15*:401 (March) 1960; Warner, M.P.: J.Am.M. Women's A. *14*:412 (May) 1959.

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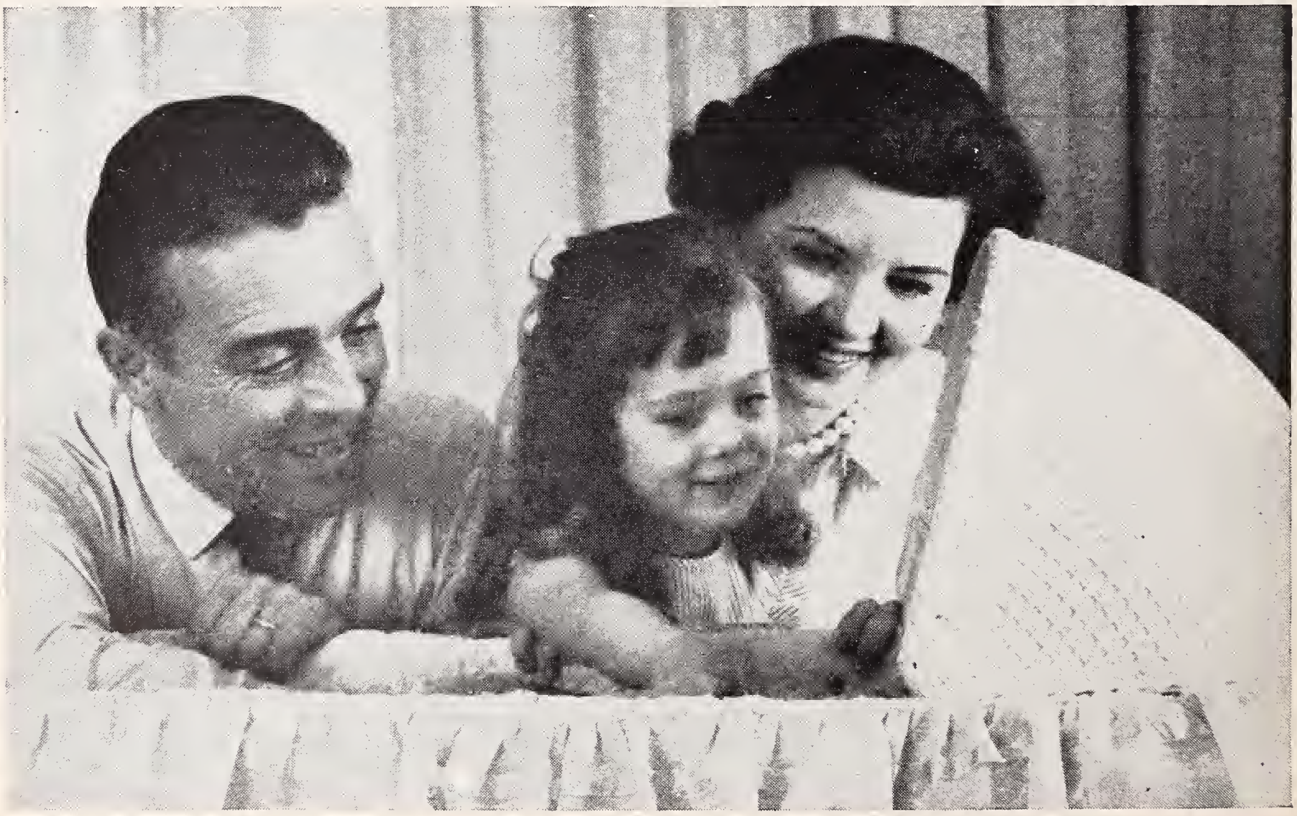

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109th Annual Meeting Preview

A scientific program by and for Minnesota physicians will be featured during the 109th Annual Meeting of the Minnesota State Medical Association, May 21, 22, and 23 in Minneapolis.

The Committee on Scientific Assembly has arranged an outstanding program of symposia, round table luncheons and lectures which will feature mostly participants who are members of the Minnesota State Medical Association.

A new feature of the 1962 meeting will be a series of Fireside Conferences on Cardiorespiratory Diseases, Monday, May 21, at 8:30 p.m., in the Hotel Leamington. The series of conferences, which will feature informal free discussions of the various aspects of pulmonary diseases are open to general practitioners as well as specialists. The Fireside Conference, will be sponsored by the Minnesota Chapter of the American College of Chest Physicians.

Cardiovascular Disease will be discussed on Monday, May 21 at 10:00 a.m., at the opening symposium of the three-day scientific assembly. Other symposia during the three-days of scientific sessions will deal with the various aspects of the following subjects: Abdominal Disease; Treatment of Inoperable Cancer; Headaches; Weakness, Dizziness, Faintness and Fits; Whiplash Injuries; Early Carcinoma of the Cervix; Psychiatric Problems; and Fallout — Fact or Fancy.

The annual new members, county officers and delegates dinner will be held Sunday, May 20, at 6:00 p.m., at the Hotel Leamington.

The annual physicians' golf tournament will be held Sunday, May 20, from 10:30 a.m. to 1:00 p.m. at the Oak Ridge Country Club in Hopkins. Prizes will be awarded. There is a modest charge for green fees. Physicians are asked to make advance reservations on the cards enclosed with the official Annual Meeting program.

Skeet and Trap events will be held Sunday, from 11:00 a.m. to 4:00 p.m., at the Hopkins Gun Club, located at Highway 5 and County Road 4. Events will include Skeet 50; Trap 50; Razzle Dazzle 25; and Champion of Champions Race. Trophies and prizes will be awarded. Physician participants in sports events and their wives and all who attend the Annual Meeting are invited to attend a 6:30 p.m. dinner at the Oak Ridge Country Club in Hopkins.

The Minnesota Chapter, American College of Chest Physicians, will hold a 6:30 p.m. dinner Monday, May 21, at the Hotel Leamington. Dinner preceded by social hour at 6:00 p.m., at the Leamington Hotel. The Minnesota Academy of General Practice annual banquet has been scheduled for 6:30 p.m. Monday at the Leamington Hotel. An entertaining banquet speaker will be featured and a 5:30 p.m. social hour will preceed the banquet.

The annual banquet of the Minnesota State Medical Association will be held Tuesday, May 22, at 7:00 p.m., in the Hotel Leamington, Hall of States. Following the banquet there will be an evening of dancing and entertainment. Hosts for this year's entertainment will be the members of the Hennepin County Medical Society and the Auxiliary. Other dinners scheduled May 21 through May 23 include: Medical Women's Association luncheon Tuesday, May 22, at 12:15 p.m., Hotel Leamington, President Washington Room "B". Speaker will be Doctor Joseph Westinghausen, University Foreign Student Adviser. Minnesota Radiological Society dinner, Tuesday, May 22, at 6:30 p.m., Minneapolis Club, preceded by a social hour at 5:30 p.m. Speaker: Gerald M. McDonnel, Los Angeles. The title of his address will be "Radiology Inside Russia—Personal Experiences." Dr. McDonnel will also give the Russell D. Carman Lecture in connection with Wednesday's symposium entitled "Fallout—Fact or Fancy."

The House of Delegates will convene for its opening session Sunday, May 20, at the Leamington Hotel. Delegates are urged to note that the second session of the House convenes Tuesday, May 22, at 9:00 a.m. Reference committees will meet Sunday evening and Monday morning.

Continued

ANNOUNCING

109 th annual meeting

FEATURING

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Charles C. Cooper	St. Paul
H. E. Drill	Hopkins
Lyle A. French	Minneapolis
Malcolm A. McCannel	Minneapolis
Charles E. Rea	St. Paul
A. E. Ritt	St. Paul
J. J. Swendson	St. Paul
John V. Thomas	Duluth
L. O. Underdahl	Rochester

HENNEPIN COUNTY MEDICAL SOCIETY

President—H. F. R. Plass	Minneapolis
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Secretary-Treasurer—Tague C. Chisholm	Minneapolis

COMMITTEE ON LOCAL ARRANGEMENTS

General Chairman—O. L. N. Nelson

Banquet—Walter E. Krafft, chairman; Bruce E. Linderholm, C. Sherman Hoyt, Rudolph J. Ripple.

Entertainment—Wayne S. Hagen, chairman; Harold G. Benjamin, Emerson E. Hoppes, Harlan A. Alexander, Robert R. Cooper.

Golf—Stuart Lane Arey, chairman; Norman B. Bloom, Philip A. Olson, Samuel G. Balkin, Harold H. Noran.

Hospitality—Kenneth F. Schaefer, chairman; A. Cabot Wohlrabe, Rollin M. Hansen, William F. Nuessle.

Public Relations—James Rogers Fox, chairman; Richard R. Fliehr, Robert D. Semsch, Arthur C. Kerkhof, David W. Feigal, John G. Fee, John F. Briggs.

Registration and Reservations—Karl R. Lundeberg, chairman; Arnold S. Anderson, Jr., William D. Bevis, Ephraim B. Cohen, Charles A. Neumeister, W. E. Park, Thomas D. Wright.

Scientific Exhibits—Lyle J. Hay, chairman; Jacob H. Strickler, Joseph J. Garamella, Edward L. Segal, Reuben Berman.

Skeet and Trap Shooting—Richard C. Tucker, chairman; Gordon W. Strom, Byron H. Roberts.

Woman's Auxiliary—Mrs. William H. Card and Mrs. Theodore S. Smith, co-chairmen.

REFERENCE COMMITTEES OF THE HOUSE OF DELEGATES

Meetings: Sunday, 8:00 p.m.; Monday, 9:30 a.m.
Leamington Hotel

SCIENTIFIC REFERENCE COMMITTEES

Medical Education Reports . . . Sunday: President Adams Room — Monday: New York Room

H. A. Vogel, New Ulm, Chairman; A. S. Anderson, Minneapolis; L. W. Johnsrud, Hibbing; G. B. Martin, Thief River Falls; B. J. Mears, St. Paul; Ernest Olson, Pine Island.

Miscellaneous Scientific Reports . . . Sunday: President Taft Room — Monday: Philadelphia Room

A. E. Brown, Rochester, Chairman; R. B. Benjamin, Minneapolis; E. J. Richardson, St. Paul; A. M. Scheidel, Mankato; M. P. Virnig, Wells; H. E. Wilmot, Litchfield.

NON-SCIENTIFIC REFERENCE COMMITTTES

Credentials.......................Registration desk, Iowa Room (Meets only before House convenes)

V. M. Johnson, Dawson, Chairman; W. H. Burnham, Minneapolis; L. E. Steiner, Albert Lea.

Medical Economics Reports . . . Sunday: President Lincoln Room — Monday: Chicago Room

J. A. Blake, Hopkins, Chairman; R. O. Bergan, Duluth; Barnard Hall, St. Paul; C. H. Hodgson, Rochester; M. M. Howell, Glencoe; D. O. Osborn, Austin.

Miscellaneous Medical Economics Reports . . . Sunday: President Jefferson Room — Monday: Milwaukee Room

G. D. Davis, Rochester, Chairman; C. A. Anderson, Hector; J. W. Gridley, Arlington; W. G. Johanson, St. Paul; G. C. MacRae, Duluth; D. J. Studer, Faribault.

Officers and Councilors Reports . . . Sunday and Monday: President Washington Room "B"

O. L. Norman Nelson, Minneapolis, Chairman; W. J. Deweese, Bemidji; W. C. Ferguson, Walnut Grove; O. M. Heiberg, Worthington; B. F. Pearson, Shakopee; J. L. Sprafka, St. Paul.

Resolutions . . . Sunday and Monday: President Washington Room "A"

Les N. Dale, Red Lake Falls, Chairman; E. C. Bayley, Lake City; C. C. Cooper, St. Paul; A. B. Hunt, Rochester; L. A. Nash, St. Paul; R. A. Rossberg, Morris.

Continued

Best wishes for another successful

Minnesota State Medical Association Annual Meeting

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Business Sessions

COMMITTEES
LEAMINGTON HOTEL

SUNDAY, MAY 20

8:00 P.M.—Reference Committees:
Medical Education Reports ....President Adams Room
Miscellaneous Scientific Reports................President Taft Room
Medical Economics Reports ....President Lincoln Room
Miscellaneous Medical Economics Reports................President Jefferson Room
Officers and Councilors Reports................President Washington “B” Room
Resolutions ....President Washington “A” Room

MONDAY, MAY 21

8:00 A.M.—Committee Breakfasts
Child Health and Immunization ....President Lincoln Room
Diabetes .... ” ” ”
General Practice .... ” ” ”
Hospitals and Professional Relations .... ” ” ”
Maternal Health .... ” ” ”
Medical Advisory .... ” ” ”
Military and Veterans Affairs ” ” ”
Public Health Education ...... ” ” ”
Public Policy ....President Wilson Room
Rheumatology and Rheumatic Diseases ....President Lincoln Room
9:30 A.M.—Reference Committee Meetings
Medical Education Reports ....New York Room
Miscellaneous Scientific Reports ....Philadelphia Room
Medical Economics Reports ....Chicago Room
Miscellaneous Medical Economics Reports ....Milwaukee Room
Officers and Councilors Reports ....President Washington “B” Room
Resolutions ....President Washington “A” Room

TUESDAY, MAY 22

8:00 A.M.—Committee Breakfasts
Athletic Injuries ....President Lincoln Room
Blood and Blood Banks .... ” ” ”
Cancer .... ” ” ”
Civil Defense and Civilian Disaster .... ” ” ”
Industrial Health .... ” ” ”
Judicial .... ” ” ”
Medical Service .... ” ” ”
Ophthalmology .... ” ” ”
Professional Liability .... ” ” ”
Rehabilitation, Medical Committee on .... ” ” ”
Rural Medical Service .... ” ” ”
State Health Relations .... ” ” ”

WEDNESDAY, MAY 23

8:00 A.M.—Committee Breakfasts
Anesthesiology ....President Lincoln Room
Board of Editors ....President Roosevelt Room
Historical ....President Lincoln Room
Statewide Congressional ....President Wilson Room

COUNCIL, HOUSE OF DELEGATES AND COUNTY OFFICERS
LEAMINGTON HOTEL

SATURDAY, MAY 19

2:00 P.M.—Council Meeting ....President Hoover Room
6:00 P.M.—Council Dinner ....President Hoover Room

SUNDAY, MAY 20

8:00 A.M.—Council Breakfast..President Hoover Room
2:00 P.M.—House of Delegates Meeting ....Iowa Room
6:00 P.M.—New Members, County Officers and Delegates Dinner ....Minnesota Room
8:00 P.M.—Reference Committee Meetings ....See Above

MONDAY, MAY 21

8:00 A.M.—Council Breakfast................................President Hoover Room
9:30 A.M.—Reference Committee Meetings ....See Above

TUESDAY, MAY 22

8:00 A.M.—Council Breakfast................................President Hoover Room
9:00 A.M.—House of Delegates Meeting ....Twin Cities Room

WEDNESDAY, MAY 23

8:00 A.M.—Council Breakfast................................President Hoover Room

Continued

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Scientific Program

Monday

MINNEAPOLIS AUDITORIUM
Chairman: Herman E. Drill

A.M. Visit Scientific and Technical Exhibits

10:00 SYMPOSIUM ON CARDIOVASCULAR DISEASE
Moderator—O. L. N. Nelson, Minneapolis
How Do You Study the Patient with High Blood Pressure?
John F. Fairbairn, II, Rochester
When and How Should the Patient Be Treated?
Arthur C. Kerkhof, Minneapolis
Harbingers of a Stroke
Jack P. Whisnant, Rochester
Questions and Answers
Does Fat in the Diet Cause Atherosclerosis?
Ivan D. Frantz, Minneapolis
What About Tobacco?
Alexander Schirger, Rochester
Which Patients Need Long-term Anticoagulant Therapy?
A. Boyd Thomes, Minneapolis
Questions and Answers
Chairman: John V. Thomas

P.M.

12:15 ROUND TABLE LUNCHEONS

2:00 SYMPOSIUM ON UPPER ABDOMINAL DISEASE
Moderator—William B. Martin, Duluth
Pain Patterns in Upper Abdominal Disease
Donald E. Ralston, Rochester
What's Causing the Jaundice?
James B. Carey, Jr., Minneapolis
Treatment of Liver Disease
Harry N. Hoffman, II, Rochester
Questions and Answers

3:15 Intermission
Visit Scientific and Technical Exhibits

4:00 SYMPOSIUM ON NEWER CONCEPTS IN TREATMENT OF INOPERABLE CANCER
Moderator—L. O. Underdahl, Rochester
Use of Hormones
B. J. Kennedy, Minneapolis
Use of Drugs
Joseph M. Kiely, Rochester
Use of Radiation
Donn G. Mosser, Minneapolis
Questions and Answers

8:30 FIRESIDE CONFERENCE ON CARDIORESPIRATORY DISEASES . . . Leamington Hotel

Tuesday

MINNEAPOLIS AUDITORIUM
Chairman: Charles E. Rea

A.M. Visit Scientific and Technical Exhibits

9:00 SYMPOSIUM ON HEADACHES
Moderator—A. B. Baker, Minneapolis
Characteristic Headache Patterns
Charles M. Jessico, Duluth
How Are These Headaches Produced?
Joseph G. Rushton, Rochester
Practical Therapy of Headaches
Zondal Miller, St. Paul
Questions and Answers

10:15 Intermission
Visit Scientific and Technical Exhibits

11:00 SYMPOSIUM ON WEAKNESS, DIZZINESS, FAINTNESS AND FITS
Moderator—Robert G. Siekert, Rochester
Erland R. Nelson, Minneapolis
Jerome A. Hilger, St. Paul
Donald W. Mulder, Rochester
Questions and Answers

P.M.

12:15 ROUND TABLE LUNCHEONS

2:00 SYMPOSIUM ON WHIPLASH INJURIES
Moderator—Lyle A. French, Minneapolis
Harry B. Hall, Minneapolis
Richard M. Steinhilber, Rochester
Mr. Sidney P. Gislason, New Ulm
Questions and Answers

3:15 Intermission
Visit Scientific and Technical Exhibits

4:00 SYMPOSIUM ON EARLY CARCINOMA OF THE CERVIX
Moderator—James J. Swendson, St. Paul
Technique of Cervical Smears
Charles H. McKenzie, Minneapolis
Cytology and Pathology
Edward H. Soule, Rochester
Selection of Cases for Surgical Management
John S. Welch, Rochester
Role of Cobalt 60 and other Radiation Sources in Treatment
Robert E. Kasper, Minneapolis
Questions and Answers

7:00 ANNUAL BANQUET....Hall of States, Leamington Hotel
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Wednesday

MINNEAPOLIS AUDITORIUM

Chairman: A. E. Ritt

A.M. Visit Scientific and Technical Exhibits

9:00 SYMPOSIUM ON PSYCHIATRIC PROBLEMS
Moderator—Howard P. Rome, Rochester
Treating the "Nervous" Patient
Richard W. Anderson, Minneapolis
Management of the Acutely Disturbed Patient
William W. Jepson, Minneapolis
Behavior Problems Among Teenagers
H. S. Lippman, St. Paul
Questions and Answers

10:15 Intermission
Visit Scientific and Technical Exhibits

11:00 SYMPOSIUM ON FALLOUT — FACT OR FANCY?
Moderator—Einer W. Johnson, Jr., Rochester
Fallout—A. L. Orvis, Ph.D., Rochester
Radiation Sickness
Gerald M. McDonnel, U. C. L. A. Medical Shcool, Los Angeles: *Russell D. Carman Memorial Lecture (Sponsored by the Minnesota Radiological Society)*
Shelters—Mass and Private
Mr. Odean Erickson, Mayo Clinic, Rochester
Questions and Answers

Special Events

SPORTS EVENTS

SUNDAY, MAY 20

GENERAL INFORMATION: Participants in sports events, their wives and all who attend the Annual Meeting are invited to attend a dinner at 6:30 p.m. at the Oak Ridge Country Club, Hopkins.

GOLF TOURNAMENT

Place: Oak Ridge Country Club, Hopkins
Tee-off Time: 10:30 a.m. to 1:00 p.m.—Sunday
Prizes will be awarded. Modest charge for dinner and green fees.

SKEET AND TRAP EVENTS

Place: Twin City-Hopkins Gun Club. Located at Highway 5 and County Road 4. (See map.)
Time: 11:00 a.m. to 4:00 p.m.—Sunday
Events: Skeet 50; Trap 50; Razzle Dazzle 25; Champion of Champions race.
Prizes: Trophies and prizes will be awarded.

SUNDAY, MAY 20

New Members, County Officers, and Delegates Dinner

6:00 P.M.—Minnesota Room, Leamington Hotel

Sports Events Dinner

6:30 P.M.—Oak Ridge Country Club, Hopkins. All physicians and their wives are cordially invited to attend the dinner for sports participants. Reservations should be made immediately on **one** of the reservation cards provided.

MONDAY, MAY 21

Minnesota Chapter, American College of Chest Physicians

6:30 P.M.—Dinner preceded by social hour at 6:00 P.M., Hotel Leamington. Panel on Management of the Cardiopulmonary Cripple. Tickets are $6.50, gratuity included.

Minnesota Academy of General Practice

6:30 P.M.—Banquet — Hall of States, Leamington Hotel, preceded by social hour in Hall of Presidents beginning at 5:30 P.M. Tickets to the banquet are $6.00, gratuity included. An entertaining speaker will be featured.

Fireside Conferences

8:30 P.M.—Hall of States, Leamington Hotel. Ten round table conferences on cardiorespiratory diseases arranged by the Minnesota Chapter, American College of Chest Physicians and the Minnesota State Medical Association. (Refreshments)

TUESDAY, MAY 22

Medical Women's Association

12:15 P.M.—Luncheon—Leamington Hotel, President Washington Room "B." Speaker will be Dr. Joseph Mestinghausen, University Foreign Student Adviser. Price $3.50, including gratuity. All women physicians welcome. Please contact Dr. Barbara Subak, 732 Chicago Avenue, Minneapolis, Federal 3-2321, for advance reservations.

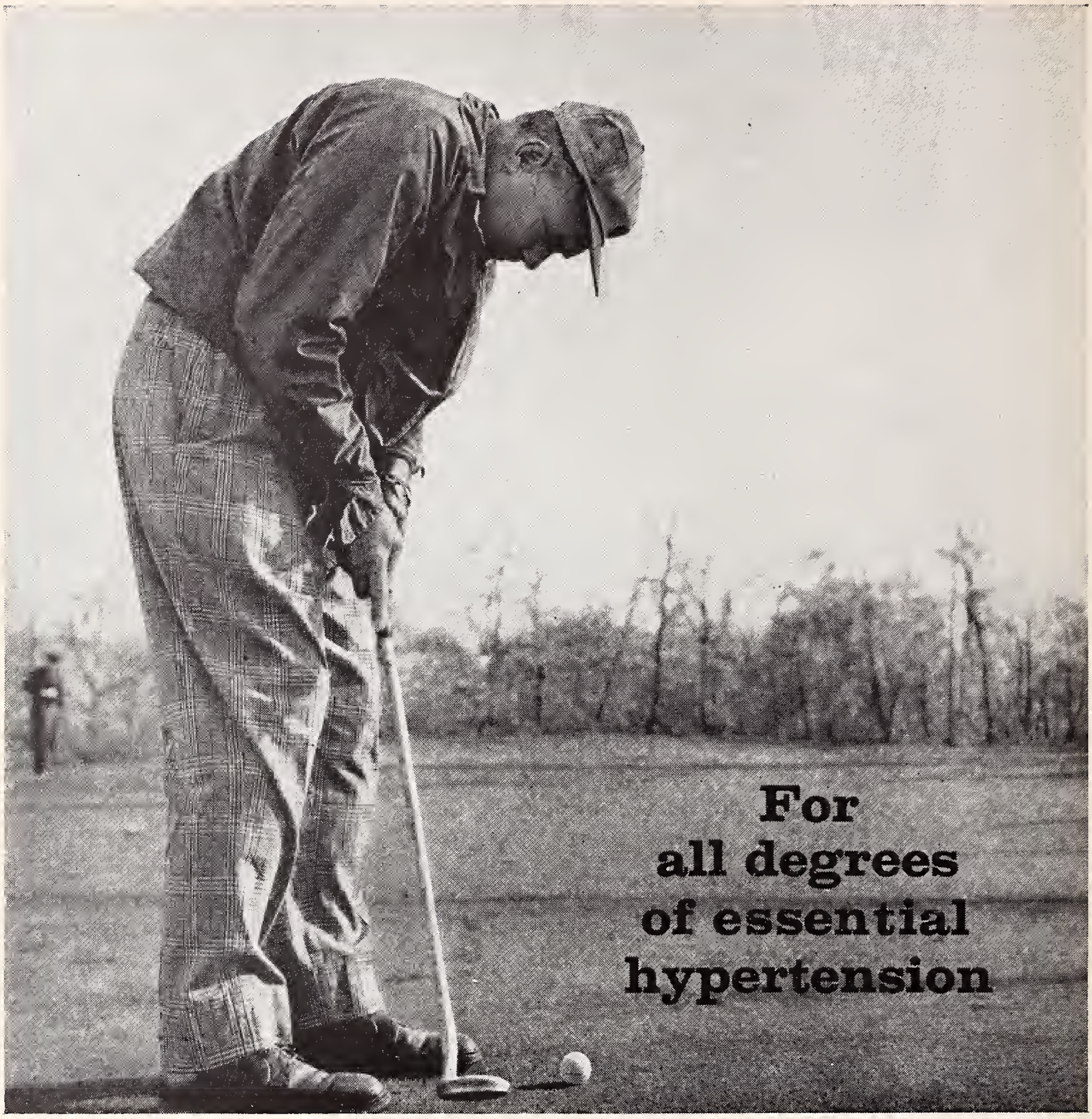
Minnesota Academy of Ophthalmology and Otolaryngology

12:30 P.M.—Luncheon—Leamington Hotel, Jefferson Room. Following luncheon, the Academy will divide into two groups — Ophthalmologists to hear Herbert E. Kaufman, University of Florida Medical School, on "Herpes Simplex of the Cornea"; Otolaryngologists to hear William G. Hemenway, University of Chicago.

Minnesota State Medical Association

7:00 P.M.—Annual Banquet — Hall of States, Leamington Hotel. Tickets are $6.50 including gratuity. Floor show and dancing.

Continued



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[†]Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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WEDNESDAY, MAY 23

Minnesota Chapter, American Academy of of Pediatrics

12:30 P.M.—Spring luncheon meeting—President Jackson Room, Leamington Hotel.

Minnesota Radiological Society

6:30 P.M.—Dinner—Minneapolis Club, preceded by social hour at 5:30. Speaker: Gerald M. McDonnel, Los Angeles, "Radiology Inside Russia — Personal Experiences."

Demonstrations

MINNEAPOLIS AUDITORIUM

Demonstration on Rehabilitative Nursing Techniques

Monday ....9:15 A.M.; 12:00; 1:00 P.M.; 3:15 P.M.
Tuesday ....10:15 A.M.; 12:00; 1:00 P.M.; 2:15 P.M.
Wednesday ....10:15 A.M.

Sponsored jointly by the Kenny Rehabilitation Institute and the Minnesota Department of Health.

Obstetric Manikin Demonstration — Immediate Postpartum Emergencies

Tuesday ....3:15 P.M. to 4:00 P.M.

Frederick J. Hofmeister, Milwaukee, Wisconsin — Consultant. Sponsored jointly by the Committee on Maternal Health of the Minnesota State Medical Association and the Minnesota Department of Health.

Round Table Luncheons

LEAMINGTON HOTEL

MONDAY
12:15 P.M.

Early Diagnosis of Diabetes Mellitus and the Importance of Early Treatment ....President Wilson Room
Wyman E. Jacobson, Minneapolis, and L. O. Underdahl, Rochester

The Selective Use of Tranquilizing and Antidepressive Drugs ....President Jackson Room
Burtrum C. Schiele, Minneapolis

Use and Abuse of Steroids ......President Lincoln Room
Asher A. White, Minneapolis, and Paul J. Bilka, Minneapolis

Which Ulcers Should Have Surgery? President Roosevelt Room
Martin A. Adson, Rochester, and Lyle J. Hay, Minneapolis

Hearing Loss in General Medicine President Taft Room
Jerome A. Hilger, St. Paul

TUESDAY
12:15 P.M.

Prolonged Labor ....President Lincoln Room
Frederick J. Hofmeister — Associate Clinical Professor, Department of Obstetrics and Gynecology, Milwaukee Hospital and Marquette University, Milwaukee, Wisconsin

Recent Trends in Antibiotics ....President Taft Room
Wesley W. Spink, Minneapolis, and William J. Martin, Rochester

Office Dermatology ....President Roosevelt Room
Elmer T. Ceder, Minneapolis, and Carl W. Laymon, Minneapolis

Emergency Tracheotomy ....President Wilson Room
Robert E. Priest, Minneapolis, and Robert J. Richardson, Minneapolis

Announcements

* **Register and Secure Your Badge** at the registration desk, Minneapolis Auditorium, on Monday from 9:00 a.m. to 5:15 p.m.; Tuesday, from 8:45 a.m. to 5:15 p.m.; Wednesday, 8:45 a.m. to 12:00 noon. Please wear your badge while you are on the convention floor. No registration fee for those who present a membership card or receipt or other evidence of membership from their county or state association or the American Medical Association.

* **Telephone Service:** Registration desk, Minneapolis Auditorium — **336-1373.** For those at business sessions, breakfasts or luncheons at the Leamington Hotel, call our Headquarters Office — **338-6053** (direct line).

* **Reservations for Round Table Luncheons.** Tickets should be purchased in advance for these luncheons (5 on Monday and 4 on Tuesday); please complete and return the enclosed reservation card. Tickets may also be purchased at the registration desk at the Minneapolis Auditorium. Latecomers are accommodated according to their choice, if luncheon limits have not already been reached. If any tickets remain unsold by approximately 11:30 a.m. the day of the luncheon, they can be purchased in the lobby of the Leamington Hotel. Tickets $3.25, gratuity included.

* **Annual Banquet** — Hall of States, Leamington Hotel, 7:00 p.m. on Tuesday. Outstanding entertainment — floor show and dancing. Formal dress is not required. Fifty Club candidates will be honored guests, and a medal for the outstanding scientific exhibit will be presented by the Southern Minnesota Medical Association. Tickets should be purchased in advance by using the enclosed reservation card, or they may be secured at the registration desk at the Minneapolis Auditorium. Tickets, $6.50, gratuity included.

* **Visit the Exhibits.** Visit the scientific and technical exhibits at the Minneapolis Auditorium. You are urged to show your appreciation to the technical exhibitors who have helped to make this meeting possible.

* **Woman's Auxiliary.** Physicians' wives who attend the meeting may secure Woman's Auxiliary programs at the Auxiliary registration desk, Solarium lobby of the Curtis Hotel.

End

Put your low-back patient back on the payroll

Soma relieves stiffness –stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A.M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. **USUAL DOSAGE: 1 TABLET Q.I.D.**

The muscle relaxant with an independent pain-relieving action

SOMA®

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Woman's Auxiliary Schedules

40th Annual Meeting

Announcement of the schedule and program for the approaching 40th Annual Meeting of the Woman's Auxiliary to the Minnesota State Medical Association has been made by the co-chairmen of general arrangements, Mrs. William Card and Mrs. Theodore Smith.

The following is the proposed schedule for this meeting which will be held in Minneapolis at the Curtis Hotel on May 21, 22 and 23:

Admission to the tea at Dayton's Oak Grill on Monday afternoon will be by tickets which can be obtained when registering.

At the Annual Luncheon on Tuesday, Carol Linner Seagren will read a current Broadway play. A reservation for this luncheon and program will be binding unless cancellation is made in ample time (24 hours). Cooperation in this matter will be greatly appreciated.

The banquet for the doctors and their wives will be held at the Leamington Hotel on Tuesday evening at 7:00 p.m.

No program is planned for Wednesday, May 23, but the coffee table will be in service in the lobby as on the two previous forenoons.

A most cordial welcome is extended to all!

Monday, May 21

Registration and coffee service	Lobby, Curtis Hotel	8:30 A.M.
Executive Board Meeting	Evergreen Room	9:30 A.M.
Executive Board Luncheon	ABC Room	1:00 P.M.
Tea	Dayton's Oak Grill	3:00 P.M.

Tuesday, May 22

Registration and coffee service	Lobby, Curtis Hotel	8:30 A.M.
Annual Meeting	East Room	9:30 A.M.
Annual Luncheon	Cardinal Room	1:00 P.M.

Wednesday, May 23

Coffee Service	Lobby, Curtis Hotel	8:30 A.M.

CONSISTENTLY SUCCESSFUL IN RELIEVING DRY, ITCHY SKIN

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STUDY 1 *Spoor, H. J.: N. Y. State J.M. 58:3292, 1958.*

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STUDY 2 *Lubowe, I. I.: Western Med. 1:45, 1960.*

satisfactory results in 94% of cases

comments: Sardo "reduced inflammation, itching, irritation, and other discomfort..."

STUDY 3 *Weissberg, G.: Clin. Med. 7:1161, 1960.*

satisfactory results in 91% of cases

comments: "Scaling disappeared, and... the skin became softer and smoother..." with Sardo.

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- neurodermatitis
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New Fireside Conferences Scheduled Monday Evening

All physicians attending the 109th annual meeting of the Minnesota State Medical Association are invited to participate in the new Fireside Conferences on Monday, May 21, at the Hotel Leamington.

Sponsored by the Minnesota Chapter of the American College of Chest Physicians and the Minnesota State Medical Association, the conferences will be informal, unrehearsed free discussions of a variety of subjects of interest to both specialists and general practitioners.

The conferences will follow the annual dinner and a panel discussion presented by the Minnesota Chapter of the College, with these events also open to general physician attendance. The dinner, preceded by cocktails, will be at 6:30 p.m. in the Jefferson-Jackson Room of the Leamington.

Participating in the panel discussion will be moderator Andrew L. Banyai, M.D., Chicago, emeritus clinical professor of medicine, Marquette University; Arthur C. Kerkhof, M.D., Minneapolis, clinical associate professor of clinical medicine, University of Minnesota; Edwin R. Levine, M.D., Chicago, assistant professor of clinical medicine, Chicago Medical School; and Gustavus A. Peters, M.D., Rochester, assistant professor of medicine, Mayo Foundation, University of Minnesota.

The panel topic will be: Management of the Cardiopulmonary Cripple.

At the Fireside Conferences, a panel of experts will be seated at each table and those attending will be encouraged to ask questions, express their own ideas and comment on the various problems of the subject under discussion. Those attending may move freely from one table to another, if and when they wish.

The Minnesota Chapter of the College will serve complimentary refreshments during the Fireside Conferences. ....

The ten topics and panels of experts will be:

1. **UNUSUAL PULMONARY DISEASES**
   Moderator: William R. Fifer, M.D., Minneapolis
   Francis E. Donoghue, M.D., Rochester; John J. Eustermann, M.D., Mankato; Andrew R. Lillie, M.D., Minneapolis; Arthur M. Olsen, M.D., Rochester; and Joseph L. Sprafka, M.D., St. Paul.

2. **PULMONARY TUBERCULOSIS**
   Moderator: Ejvind P. Fenger, M.D.
   Earl J. Black, M.D., St. Paul; Norman Blank, M.D., Minneapolis; Thomas J. Kinsella, M.D., Minneapolis; Earl T. Opstad, M.D., Minneapolis; and Bernard J. Terrell, M.D., Nopeming.

3. **TRAUMA TO THE THORAX**
   Moderator: Nathan K. Jensen, Minneapolis
   John F. Alden, M.D., St. Paul; J. Richards Aurelius, M.D., St. Paul; Frank E. Johnson, M.D., Minneapolis; R. Drew Miller, M.D., Rochester; and David V. Sharp, M.D., Minneapolis.

4. **INTRATHORACIC TUMORS AND ESOPHAGEAL DISEASE**
   Moderator: Howard A. Andersen, M.D., Rochester
   Philip E. Bernatz, M.D., Rochester; Josiah Fuller, M.D., Duluth; Edgar S. Harrison, M.D., Rochester; Leo A. Nash, M.D., St. Paul; and Lyle A. Tongen, M.D., St. Paul.

5. **CONGENITAL AND RHEUMATIC HEART DISEASE**
   Moderator: Paul Adams, M.D., St. Paul
   Lewis S. Carey, M.D., Minneapolis; Paul F. Dwan, M.D., Minneapolis; Jesse Edwards, M.D., St. Paul; John Kirklin, M.D., Rochester; William F. Mazzitello, M.D., St. Paul; and Richard L. Varco, M.D., Minneapolis.

Continued

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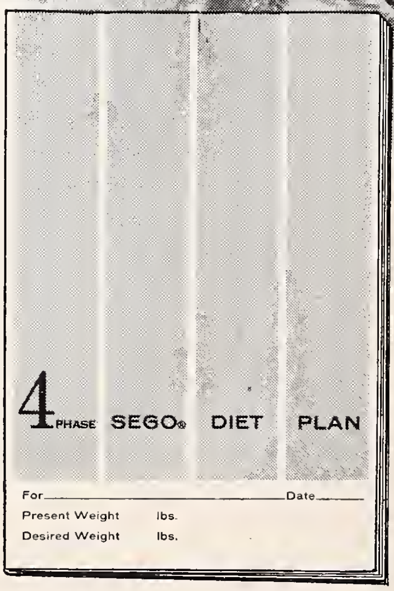
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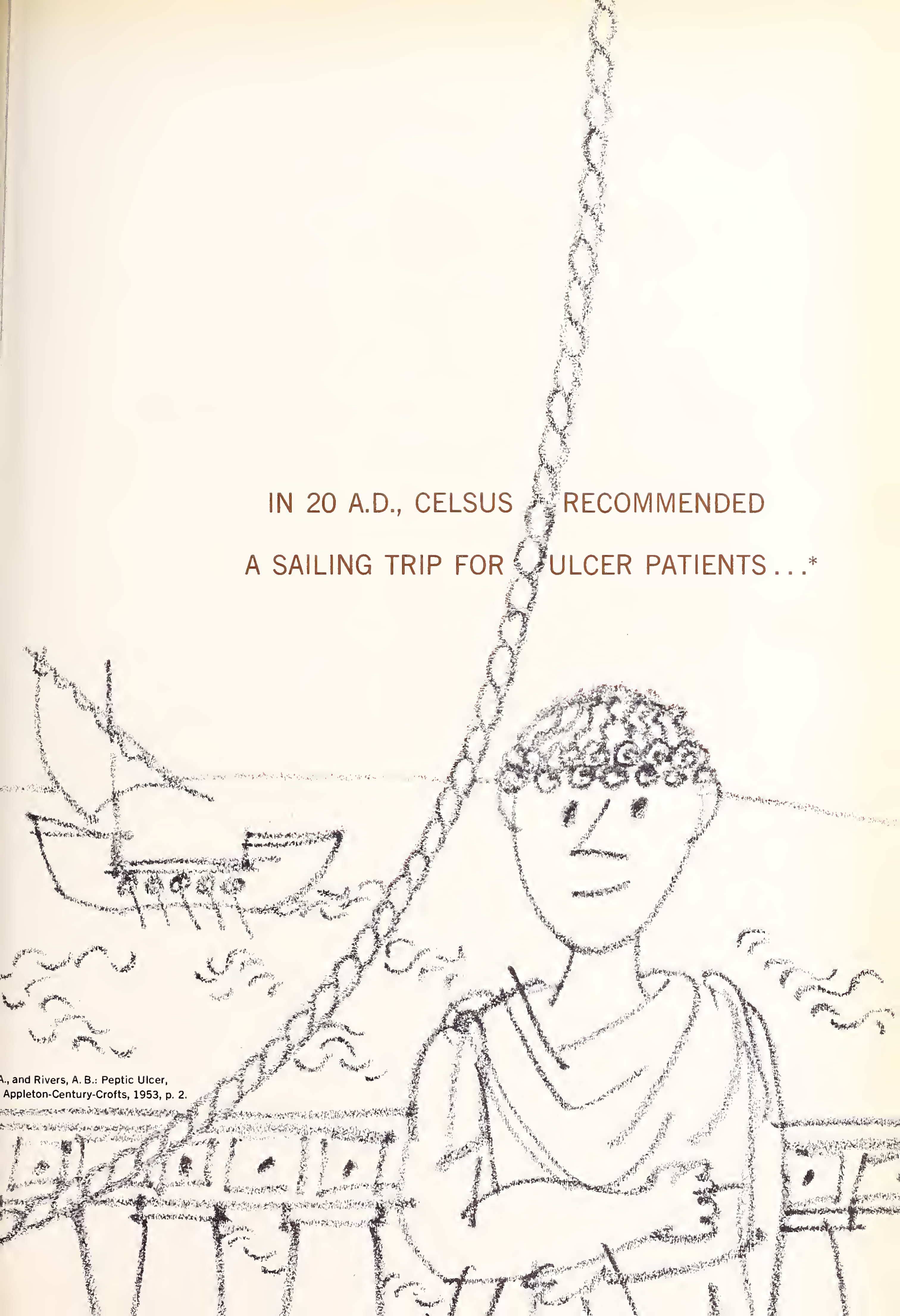
A SAILING TRIP FOR ULCER PATIENTS . . .*



A., and Rivers, A. B.: Peptic Ulcer,
Appleton-Century-Crofts, 1953, p. 2.

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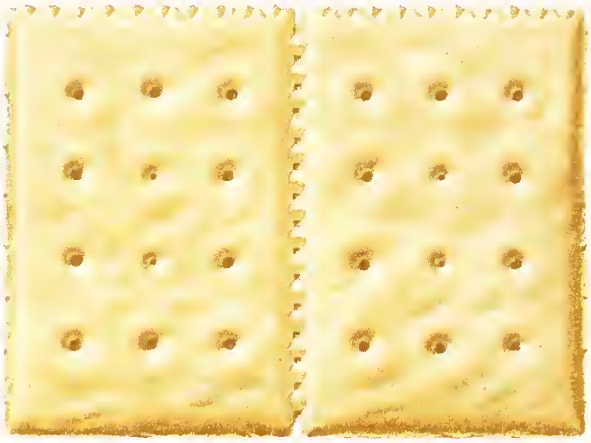

actual size of two wafers

- Andercids help assure patient acceptance and cooperation even over extended periods
- combine classic, superior antacid components for prompt and potent control of acidity
- formulated to avoid change in bowel function

Prophylactically

- for acid hypersecretors prior to the seasons of peak ulcer incidence
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Therapeutically

- for peptic ulcers
- for gastritis
- for heartburn of pregnancy

whenever an antacid is indicated

Composition: Each therapeutic unit (one wafer) contains 500 milligrams combined calcium carbonate and magnesium trisilicate, with added milk solids, incorporated in a crisp, oven-baked wafer.

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Dosage: 1-2 wafers between meals, as needed, or as directed by physician.

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6. **CARDIAC ARRHYTHMIAS**
Moderator: Arthur C. Kerkhof, M.D., Minneapolis
Mark C. L. Hanson, M.D., Minneapolis; Samuel W. Hunter, M.D., St. Paul; James C. Mankey, M.D., Minneapolis; William B. Martin, M.D., Duluth; and Alan P. Rusterholz, M.D., St. Paul.

7. **CONGESTIVE HEART FAILURE**
Moderator: Milton W. Anderson, M.D., Rochester
James C. Broadbent, M.D., Rochester; Bernard J. Cronwell, M.D., Austin; Dennis J. Kane, M.D., St. Paul; James H. Kelly, M.D., St. Cloud; and John B. Moyer, M.D., Duluth.

8. **CORONARY DISEASE**
Moderator: Milton M. Hurwitz, M.D., St. Paul
Kurt Amplatz, M.D., Minneapolis; Reuben Berman, M.D., Minneapolis; Robert O. Brandenburg, M.D., Rochester; Joseph J. Garamella, M.D., Minneapolis; and Joseph M. Ryan, M.D., St. Paul.

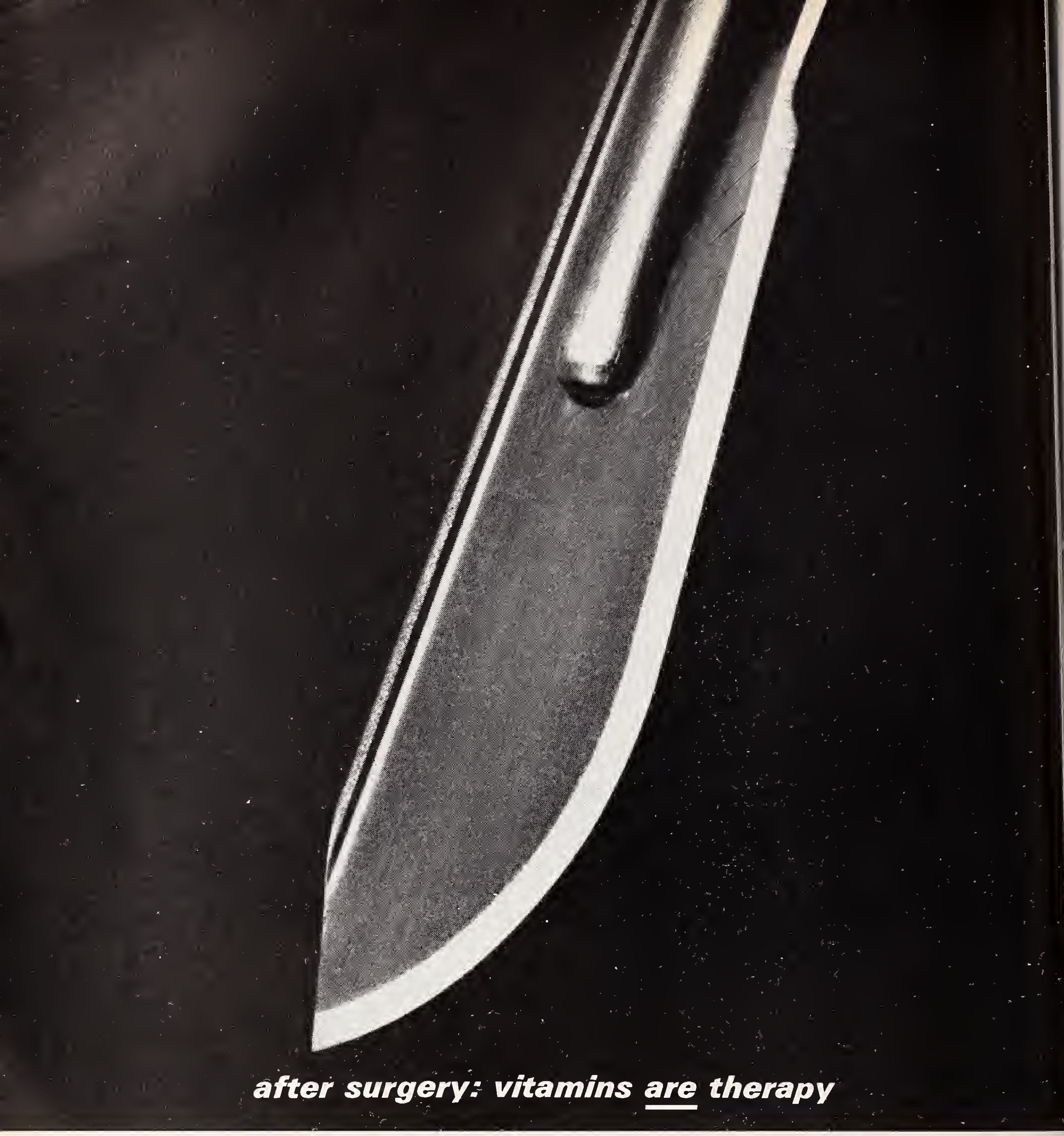
9. **ALLERGIES AND ASTHMA**
Moderator: Gustavus A. Peters, M.D., Rochester
John A. Culligan, M.D., St. Paul; William S. Eisenstadt, M.D., Minneapolis; Daniel Flink, M.D., St. Paul; Everett H. Karon, M.D., St. Paul; and Clarence Siegel, M.D., St. Paul.

10. **FUNGUS DISEASES**
Moderator: Russell H. Frost, M.D., St. Paul
Jesse E. Douglass, M.D., Cannon Falls; Joseph E. Geraci, M.D., Rochester; Wendell H. Hall, M.D., Minneapolis; Walter R. Schmidt, M.D., Minneapolis; Jerome D. Textor, M.D., Anoka; and Shih Hao Tsai, M.D., Minneapolis.

Medical Manuscript Awards

To those who wish to try for an award or prize for their manuscript medical writing, the following list is available, or details can be obtained by referring to J.A.M.A. and the brief reference attached to these various awards:

Fight for Sight Citation. Feb. 17, 1962, p. 51
Dermatology Essay Contest. Feb. 10, 1962, p. 33
Blakeslee Awards, (American Heart Ass'n.) Feb. 3, 1962, p. 53
A. E. Bennett Neuropsychiatric Research Foundation Award, Jan. 27, 1962, p. 45
American Academy of Arts and Sciences Monograph Prize, Jan. 20, 1962, p. 54
A. Cressy Morrison Award (Natural Science Research) Jan. 13, 1962, p. 51
Rubin Award, (Fertility and Sterility) Jan. 6, 1962, p. 25
Ames Award, (Gastroenterology) Jan. 6, 1962, p. 26
Central Ass'n. of Obstetricians and Gynecologists, Annual Award, Dec. 23, 1961, p. 33
Samuel D. Gross prize, (Surgery—every five years) Nov. 18, 1961, p. 43
E. Mead Johnson Awards, (Research in Child Health) Oct. 7, 1961, p. 31
Borden Award for Research relating to infant feeding, Oct. 7, 1961, p. 31
Van Meter Prize Award (Goiter) Sept. 16, 1961, p. 46
Mr. and Mrs. J. N. Taub International Awards for Research in Psoriasis, Sept. 9, 1961, p. 36
Memorial Medal Award (for residents in radiology) Aug. 5, 1961, p. 35
Urology Essay Award. July 29, 1961, p. 15
Van Meter Prize, (American Thyroid Assn.) July 8, 1961, p. 23
Norval H. Pierce Award in Otolaryngology, June 3, 1961, p. 39
Medical History Prize, June 3, 1961, p. 40
Weir Mitchell Award Essay, (Neurology) April 1, 1961, p. 35
Revere Annual $1,000 Award (Paper published in Journal of New Drugs) May 20, 1961, p. 40
Psychosomatic Medicine Contest, April 29, 1961, p. 32
Ross Award (for G. P.'s) April 22, 1961, p. 36
Maurice Goldblatt Cytology Award (Outstanding contribution; perhaps not writing) April 22, 1961, p. 38
A. E. Bennett Award (Offered by Society of Biological Psychiatry) March 25, 1961, p. 37
Modern Medical Monographs Awards (Clinical subjects in field of internal medicine), March 25, 1961, p. 38. Also March 4, 1961, p. 45
Jane Nugent Cochems Competition (Thrombophlebitis) (Colorado physicians only) March 11, 1961, p. 37
Casselberry Award in Laryngology and Rhinology, Mar. 11, 1961, p. 37
Graduate and Medical Student-Intern Essay Contest (Diabetes) Feb. 25, 1961, p. 34
Annual Hofheimer Prize (American Psychiatric Ass'n.) Jan. 14, 1961, p. 36
Minnesota Medicine Award, Vol. 45, #4, Page 373
Southwestern Medicine Award, Vol. 42, #12



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Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

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STRESSCAPS®

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Medicine
IN WRIGHT COUNTY, Part III

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

George C. Barton, (occasionally misspelled Burton) came to Buffalo from Minneapolis in October, 1887 and at first had his office at Shimmin's Drugstore.* He immediately became active in local affairs. He discussed the question of prohibition by Congress at the Literary Society, in the affirmative. In December, 1888 there was a case of well poisoning; he was given the water from the well for examination and he testified that he analized it and found Paris Green.**

Dr. Barton graduated from Jefferson Medical College, Philadelphia, Pennsylvania in 1880 and received his Minnesota license September 29, 1884. There is little record as to his practice of medicine while in the county. He took great interest in politics on the Democratic side and started a weekly newspaper at Buffalo, the *Buffalo Gazette,* which, after several years,‡ he sold to Dr. T. J. Catlin of Delano in 1893, and the Gazette was moved to Delano, where it was a staunch supporter of William Jennings Bryan and his 16 to 1 campaign. Dr. Barton practiced in Buffalo until 1893 and then moved to Minneapolis. There is no record of any further activity in Wright County.

Barrett. All information about Dr. Barrett is contained in an item in the *Delano Eagle* (October 9, 1884) which states that he was called to the "Dude Club" in Waverly when a member fainted during the initiation. He diagnosed over-heating. It is not known where he was located.

E. H. Belyea. All that we know of him is contained in his professional card which appeared in the *Delano* (*Wright County*) *Eagle* of November 19, 1882: "E. H. Belyea, physician and surgeon formerly of Troy, Vermont. Enquire at Postoffice or Young's Hotel. Calls promptly attended at all hours. Delano."

Mrs. C. A. Bennett, M. D. was born in Rockford in 1879. It seems she was a quack and all that is known about her is what she advertised herself in *The Wright County Eagle* (Delano) for many months in that year: "Consultation free ... Mrs. C. A. Bennett, M. D., a lady physician, late of Minneapolis, formerly of Detroit, Michigan, now of Rockford, Minnesota. Mrs. Bennett has had *twenty years* experience in the practice of medicine, and during the last war was one of the *prescribing physicians* in the hospitals for maimed and debilitated soldiers at Detroit, Michigan.

"Mrs. Bennett is of the Botanic and Eclectic schools of medicine and has been the means of restoring many hopeless cases to perfect health. She has given special attention to chronic complaints.

---

*__Delano Eagle,__ Oct. 20, 1887.

**__Delano Eagle,__ Dec. 13, 1888.

†He started the **Buffalo Gazette** early in 1889 or perhaps even before. The **Delano Eagle** of May 30, 1889 speaks of him as Editor of the **Buffalo Gazette** who "made a flying trip to Delano, presumably for the purpose of concluding a sale of his white elephant."

Continued

a relaxed mind in a relaxed body
with
Trancopal®
Brand of chlormezanone
effective TRANQUILIZER ■ potent MUSCLE RELAXANT

When you prescribe Trancopal you can see how this "tranquilaxant" speedily helps the anxious patient. It quiets his psyche — and this quieting helps relax tense muscles. It eases muscle spasm — and this easing helps put the mind at rest.

DeNyse[1] notes that the effect of Trancopal as a quieting agent ". . . may play a part in the skeletal muscle relaxing results obtained." Gruenberg[2] used Trancopal to treat patients with musculoskeletal disorders, and commented: "In addition to relieving spasm and pain, with subsequent improvement in movement and function, Trancopal reduced restlessness and irritability in a number of patients."

Trancopal has an unsurpassed record of safety. Very few side effects occur with Trancopal. You may see them in only about two out of a hundred patients, and they will almost always be mild.

Available: 200 mg. Caplets® (green colored, scored), bottles of 100
100 mg. Caplets (peach colored, scored), bottles of 100

Dosage: Adults, 1 Caplet (200 mg.) three or four times daily;
children (5 to 12 years), from 50 to 100 mg. three or four times daily.

Before prescribing, consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

References: 1. DeNyse, D. L.: M. Times *87*:1512 (Nov.) 1959.
2. Gruenberg, F.: Current Therap. Res. *2*:1 (Jan.) 1960.

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"Persons afflicted with Rheumatisium, Neuralgia" - then follows a list of complaints covering the entire body and practically all ailments, including female complaints, deafness and spinal disease - "and many not mentioned. Mrs. Bennett will attend obstetric cases and may be consulted during the period of lactation.

"She is also the sole owner of Mrs. C. A. Bennett's *Bronchial Lozenges* for catarrh, asthma . . ."

She then refers by name to a number of Detroit, Mich. physicians and finally advertises herself as a druggist with a "choice selection and good supply of drugs and medicines. Physicians' prescriptions carefully compounded."

John Bennette, was listed as at Smith Lake in 1886 and 1890. He was the only physician in this small town of one hundred. There is no record of his medical school or licensure, and nothing as to his activity as a practitioner is known. The village was a small inland group of houses, north of the Great Northern Railroad, a few miles west of Howard Lake, and noted as the site of the Indian Massacre of the Dustin family in 1863. The settlement never developed into a village.

K. E. Bergquist, is mentioned on the roster of the Wright County Medical Society on January 2, 1905 as practicing in Cokato. He is no doubt identical with Dr. Karl Emil Bergquist who was born in St. Peter, Minn., Dec. 24, 1874, graduated from Hamline University, Medical Department June 6, 1897, was licensed in Minnesota four days later, June 10. He may have come to Wright County before the turn of the century. He practiced in Duluth between 1928 and 1935 when he moved to Battle Lake, Otter Tail Co., and became resident physician of the Otter Tail County Sanatorium (Dec. 1941-Oct. 1954). He died on December 10, 1954 at Fergus Falls.

Bishop practiced in Howard from at least 1879 until 1883 or 1884. In August, 1879 a news item* tells of his visit in Delano, and an item in October, 1883 mentions his plans of spending the winter in Florida with his family. The last notice about him appeared in March, 1884 which announced that Dr. Hudson rented Dr. Bishop's home. **

He is probably identical with Dr. Ira Bishop who graduated from Rush Medical College in 1876, was licensed in Minnesota in 1884, located in Mapleton, Blue Earth County in 1891 and died there in June, 1928. According to his obituary † he practiced fifty years in Mapleton and a short time before that in Wisconsin. He died at the age of seventy-eight (which would place the year of his birth in 1850).

Frank E. Bissell, Sr. Although he practiced in Wright County after 1901 he is included here because he practiced for many years in the general area. Dr. Bissell had graduated from the Charity Hospital Medical College, Cleveland, Ohio in 1869. He practiced first in Litchfield, Meeker County, ‡ then moved to Cold Springs, Stearns County, in the spring of 1878. A Stearns County newspaper announced that besides practicing in Cold Springs he would open a drugstore. He later returned to Litchfield and was located there when he was licensed December 31, 1883. His son, Dr. Frank E. Bissell, Jr., graduated from the University of Minnesota in 1902 and both located in Maple Lake around 1905. His son moved to Minneapolis in 1907 and specialized in x-ray diagnosis.

John Bothmann (*Bothman*) was a very controversial figure in Wright County through the few years he stayed there. The first we learn of him in March, 1886 # is that he was arrested "some time ago" for practicing without a diploma and was under bond of $100. This bond was raised to $200. In April he brought witnesses from St. Paul, New Ulm and St. Peter for the purpose of proving that he had practiced in Minnesota for fifteen years. It seems that he located from the start in Montrose and there usually was some notoriety. In August, 1887 he purchased the Werchsler property.

---

*The Eagle (Delano) August 7, 1879.
**The Eagle March 27, 1884.
†Obituary in Journal Lancet, 1928.
‡See Medical Men of Meeker County to 1900 by Harold E. Wilmot, M.D. (privately printed, Litchfield, 1956 and Minnesota Medicine 1958-59.)
#Delano Eagle, March 25, 1886.

Relieves Anxiety and Anxious Depression

The outstanding effectiveness and safety with which Miltown relieves anxiety and anxious depression—the type of depression in which either tension or nervousness or insomnia is a prominent symptom—has been clinically authenticated time and again during the past six years. This, undoubtedly, is one reason why physicians still prescribe meprobamate more often than any other tranquilizer in the world.

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1 Acts dependably—without causing ataxia or altering sexual function

2 Does not produce Parkinson-like symptoms, liver damage or agranulocytosis

3 Does not muddle the mind or affect normal behavior

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Usual dosage: One or two 400 mg. tablets t.i.d.

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS® – 400 mg. *unmarked*, coated tablets; and in *sustained-release* capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

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CM-6709

In November, 1887 he visited Delano and during his absence an insane man was brought to his home for treatment, "but when the so-called Dr. came home, it was hard to distinguish which of the two was the worst." ##

The last one hears of him comes from Waverly, "Dr. Bothman, a professional charlatan who formerly lived at Montrose and was well known here, was a short time since sentenced to a 5 year's term in Stillwater." * Nothing could be learned of his background. He was not licensed.

Benjamin I. Brainard (*Brainerd*) graduated from the College of Physicians and Surgeons, Chicago, Illinois in 1886. He was licensed in Minnesota July 16 of the same year, giving as his location Plato, McLeod County. He is listed in Plato also in 1890, but according to a statement of Dr. H. E. Cassell, who located in Cokato in 1887, he found that Dr. Brainard had preceded him in that town. He is listed in Cokato as late as 1895, but for a short time he apparently practiced in Montrose.

Benjamin L. Brigham, supposedly came to Montrose about 1883 to 1884. He was a graduate of the College of Physicians and Surgeons, Baltimore, Maryland in 1880. He may have located in Montrose later than mentioned, because Polk's Medical Directory lists him there first in 1890 and again in 1893, although no longer in 1896.

Newspapers mention him first in April, 1887 during a measles outbreak in Montrose. ** In October, 1887 an item announces that he left for Buffalo "where he will make his future home,"† and it also mentions a planned partnership with Dr. Cady. In May, 1888 he and Dr. Cady examined a mental patient before a judge and the patient was adjudged insane. ‡ In November of that year he apparently was back in Montrose because a boy with an eye infection was brought to him there from Hollywood, Carver County, and in January, 1889 his professional card definitely states so: "Dr. B. L. Brigham, Physician and Surgeon, attendance at all hours. Office at Drugstore, Montrose, Minnesota."

It is remembered that he gave health talks at public meetings. For instance in May, 1889 he gave two lectures for the physiology class "at the solicitation of teachers and scholars . . . parents and all invited;" one was on bones and muscles and one on circulation; these were to be followed by one on the nervous system. His practice was not very large, but he was sufficiently thought of to be called to other towns.

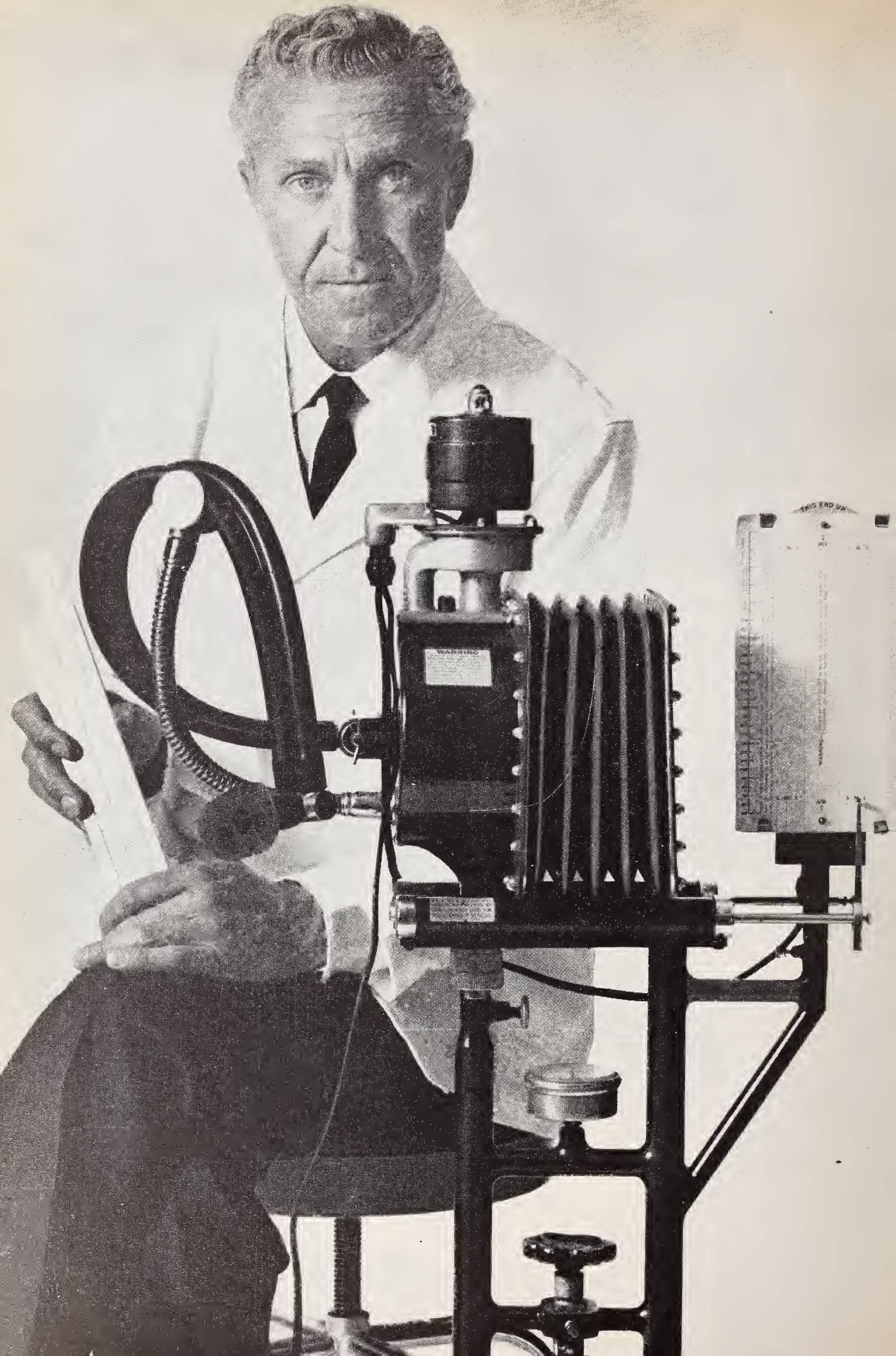
It is not known exactly when he left Wright County. For a while he may have practiced in McLeod County because a news item from Howard Lake of around 1889 states that "Dr. Brigham was over from Winsted to attend a patient."

Dr. Brigham was licensed in Minnesota December 21, 1883 when the medical practice act went into force. He was married and had four children, at least two of which were born in Wright County.

In 1927 he was listed in Kettle Falls, Washington and he died in Tacoma, Washington January 30, 1942 at the age of eighty-three. (Therefore, he must have been born about 1859).

##Delano Eagle, November 24, 1887.
*Delano Eagle, April 12, 1888.
**Delano Eagle, April 7, 1887.
†Delano Eagle, Oct. 6, 1887.
‡Delano Eagle, May 17, 1888.

(TO BE CONTINUED)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WARNING

Can we measure the patient's comfort?

he physician can measure the basal metabolic rate by means of oxygen consumption. But he has no instrument—no objective test—for measuring comfort.

For this, he must depend upon his own powers of observation and the patient's wn description of how he feels.

Because these are, admittedly, subjective criteria, the validity of results hinges ntirely on the experience and objectivity of the investigators involved.

Such well-qualified clinicians have reported that a new corticosteroid developed n the research laboratories of Upjohn actually raises the level of relief obtainable with this type of therapy.

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Each tablet contains Alphadrol (fluprednisolone) 0.75 mg. or 1.5 mg. Supplied in bottles of 25 and 100.

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More than twice as potent as prednisolone, Alphadrol exhibits no new or bizarre side effects. Salt retention, edema or hypertension, potassium loss, anorexia, muscle weakness or muscle wasting, excessive appetite, abdominal cramping, or increased abdominal girth have not been a problem.

Indications and effects

The benefits of Alphadrol (anti-inflammatory, antiallergic, antirheumatic, antileukemic, antihemolytic) are indicated in acute rheumatic carditis, rheumatoid arthritis, asthma, hay fever and allergic disorders, dermatoses, blood dyscrasias, and ocular inflammatory disease involving the posterior segment.

Precautions and contraindications

Patients on Alphadrol will usually experience dramatic relief without developing such possible steroid side effects as gastrointestinal intolerance, weight gain or weight loss, edema, hypertension, acne or emotional imbalance.

As in all corticotherapy, however, there are certain precautions to be observed. The presence of diabetes, osteoporosis, chronic psychotic reactions, predisposition to thrombophlebitis, hypertension, congestive heart failure, renal insufficiency, or active tuberculosis necessitates careful control in the use of steroids. Like all corticosteroids, Alphadrol is contraindicated in patients with arrested tuberculosis, peptic ulcer, acute psychoses, Cushing's syndrome, herpes simplex keratitis, vaccinia, or varicella.

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DURING BIRTH
IN THE AN
IN THE DECLINING YEARS
IN THE YEARS OF CHANGE
IN THE "FRANTIC FORTIES"
IN

"All the world's a stage..
And one man in his time
plays many parts,
His acts being seven ages..."*

*As You Like It, Act II, Sc. 7

IN THE EMOTIONAL TEENS
IN PREGNANCY AND A

through all seven ages of man

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effective anxiety control
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in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

In each of these areas, VISTARIL is often effective alone or as an adjunct to other therapy. For example, in his series of 67 patients, King[1] found that 62 showed remission of anxiety, tension, nervousness and insomnia, as well as alleviation of symptoms associated with various functional and psychophysiological disturbances. He concludes that VISTARIL is well suited for use in the practice of internal medicine.

In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,[2] who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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VISTARIL, hydroxyzine pamoate (oral) and hydroxyzine hydrochloride (parenteral solution), is a calming agent unrelated chemically to phenothiazine, reserpine, and meprobamate.

VISTARIL acts rapidly in the symptomatic treatment of a variety of neuroses and other emotional disturbances manifested by anxiety, apprehension, or fear—whether occurring alone or complicating a physical illness. The versatility of VISTARIL in clinical indications is matched by wide patient range and a complete complement of dosage forms. The calmative effect of VISTARIL does not usually impair discrimination. No toxicity has been reported with the use of VISTARIL at the recommended dosage, and it has a remarkable record of freedom from adverse reactions.

INDICATIONS: VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

ADMINISTRATION AND DOSAGE: Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

PRECAUTIONS: Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

SUPPLIED: VISTARIL *Parenteral Solution* (hydroxyzine hydrochloride)—10 cc. vials, 25 mg. per cc. and 50 mg. per cc.; 2 cc. ampules, 50 mg. per cc. VISTARIL *Capsules* (hydroxyzine pamoate)—25, 50, and 100 mg. VISTARIL *Oral Suspension* (hydroxyzine pamoate)—25 mg. per 5 cc. teaspoonful.

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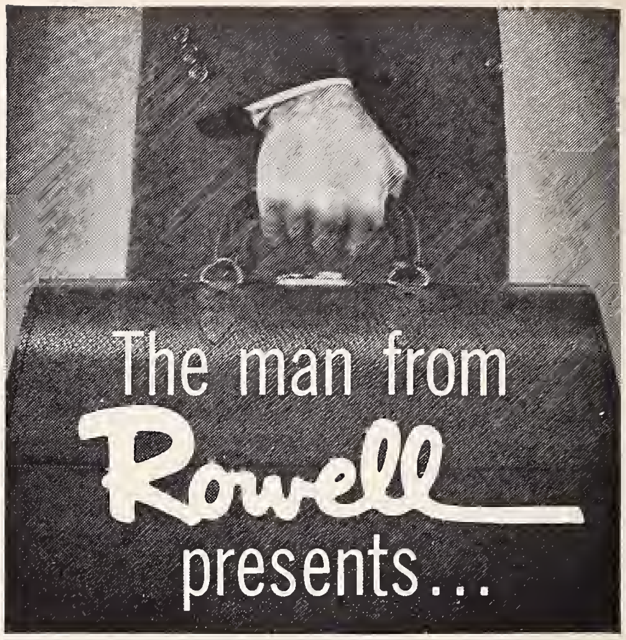

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Vio-Dex, introduced in 1950, is now a standard in obesity-control therapy.
Vio-Dex Timelets offer sustained release of dextroamphetamine. One Timelet in the morning lasts all day. Available in 10 mg. and 15 mg. dosage forms.
Vio-Dexose chewable tablets, with dextrose and dextroamphetamine, provide a dual attack on hunger and allow dosage flexibility.
Contraindications: Prepsychotic anxiety and agitation, and hypersensitivity to sympathomimetic agents. Use with caution in patients with cardiovascular disease.
Side Effects: Seldom encountered, include nervousness and insomnia. (Rx only)

Formulation:	**Vio-Dex Red & Yellow Capsule†**	**Vio-Dex Timelets††**	**Vio-Dexose Citrus Flavored Tablet†‡**
Dextro-Amphetamine Phosphate	5.0 mg.	10 mg.*, 15 mg.**	2.5 mg.
Phenobarbital	16 mg.	32 mg.	....
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Vitamin A	5000 I.U.	5000 I.U.	1000 I.U.
Vitamin D	1200 I.U.	1200 I.U.	100 I.U.
Vitamin B-1	3 mg.	3 mg.	0.5 mg.
Vitamin B-2	3 mg.	3 mg.	0.5 mg.
Vitamin B-6	1 mg.	1 mg.	0.15 mg.
Vitamin C	100 mg.	100 mg.	15 mg.
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†1 before each meal †‡1 or 2 before or between meals

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Meetings and Announcements

APRIL

West Virginia Academy of Ophthalmology and Otolaryngology Meeting, April 23-25 Greenbrier Hotel, White Sulphur Springs, West Virginia. Contact: Dr. Worthy W. McKinney, 109 E. Main Street, Veckly, West Virginia.

American College of Surgeons Meeting, April 16-18, Sheraton-Park Hotel, Washington, D. C. Contract: College, Chicago.

Chicago Committee on Trauma of the American College of Surgeons Course on Fractures and Other Trauma, April 25-28 at John B. Murphy Memorial Auditorium, Chicago. Contact: Dr. Fahey, 179 West Howard, Chicago.

American Academy of Pediatrics Spring Session, Statler-Hilton, Los Angeles, April 22-24. Contact: E. H. Christopherson, M.D., A.A.P., 1801 Hinman Avenue, Evanston, Illinois.

Western Safety Congress and Exhibits, April 17-19, Ambassador Hotel, Los Angeles. Contact: Joseph Kaplan, Greater Los Angeles Chapter National Safety Council, Los Angeles.

MAY

Minnesota State Medical Association 109 Annual Meeting, Minneapolis Auditorium, May 21-23. Contact: Harold Brunn, Exec. Secy.

American Rhinologic Society Course on "Expanded Surgery of Nasal Septum" at St. Michael Hospital, Milwaukee, May 16-19. Contact: Rhinologic Society, Chicago.

New York University Schools of Medicine, Dept. of Dermatology holding Fourth Annual Howard Fox Memorial Lecture, May 8, Alumni Hall. Contact: David G. Leo, Medical Center.

American College of Physicians Course "Fundamental and Applied Aspects of Cardiology, May 14-16, Wayne State University College of Medicine, Detroit. Also Course May 21-25 "The Neurology of Diseases of Internal Medicine" Harvard Medical School, Boston. Contact: College of Physicians, Philadelphia.

Minnesota Association of Blood Banks Meeting May 8-9, Minneapolis. Contact: James Utterbach, Minnesota Association of Blood Banks, Minneapolis.

JUNE

American Medical Association 111th Annual Meeting, McCormick Place, Chicago. Contact: AMA, Chicago.

American Association for the Study of Headache, Annual Meeting, June 23, Palmer House, Chicago. Contact: Dr. Bayard Horton, Mayo Clinic, Rochester.

Medical Library Association Annual Meeting, June 4-8, Sheraton-Chicago Hotel, Chicago. Contact: Donald Washburn, D.D.S., 222 E. Superior St., Chicago.

American College of Chest Physicians Annual Meeting, Chicago, June 21-25, Morrison Hotel. Contact: Murry Kornfeld, College of Chest Physicians, Chicago.

American College of Physicians Course, "Psychiatry for the Internist," June 4-8, The Psychiatric Institute, University of Maryland School of Medicine, Baltimore. Contact College of Physicians, Philadelphia.

ANNOUNCEMENTS

Six fellowships for residents in Ophthalmology to be awarded by Guild of Prescription Opticians of America, July 1. Application must be received by May 15. Write: Fellowships, Guild of Prescription Opticians of America, 110 E. 23rd St., New York City.

Southern Medical Association, Section of Ophthalmology and Otolaryngology will accept papers to be considered for presentation at the Miami Beach annual meeting, Nov. 12-15, until May 15. Contact: Dr. Albert Esposito, First Huntington National Bank Bldg., Huntington, West Virginia.

Committee on scientific exhibits for the June meeting of Minnesota State Medical Society is desirous of receiving applications from persons or organizations interested in making an exhibit. Contact: Lyle J. Hay, M.D., 714 9th Avenue South, Minneapolis.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota; Internal Medicine April 16-18; Surgery April 26-28; Gynecology April 30-May 2; May 7-9 Ophthalmology; Proctology for General Physicians May 14-18; Pyschiatry May 31-June 2.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

The American College of Chest Physicians has established a fund providing for loans to resident physicians to stimulate interest in postgraduate study of chest diseases and to assist students in continuation of studies in diseases of the chest. Any physician who has completed an internship of one year or more in an acceptable hospital may apply. Application forms may be secured from Committee on Resident Loan Fund, American College of Chest Physicians, 112 E. Chestnut Street, Chicago 11, Illinois.

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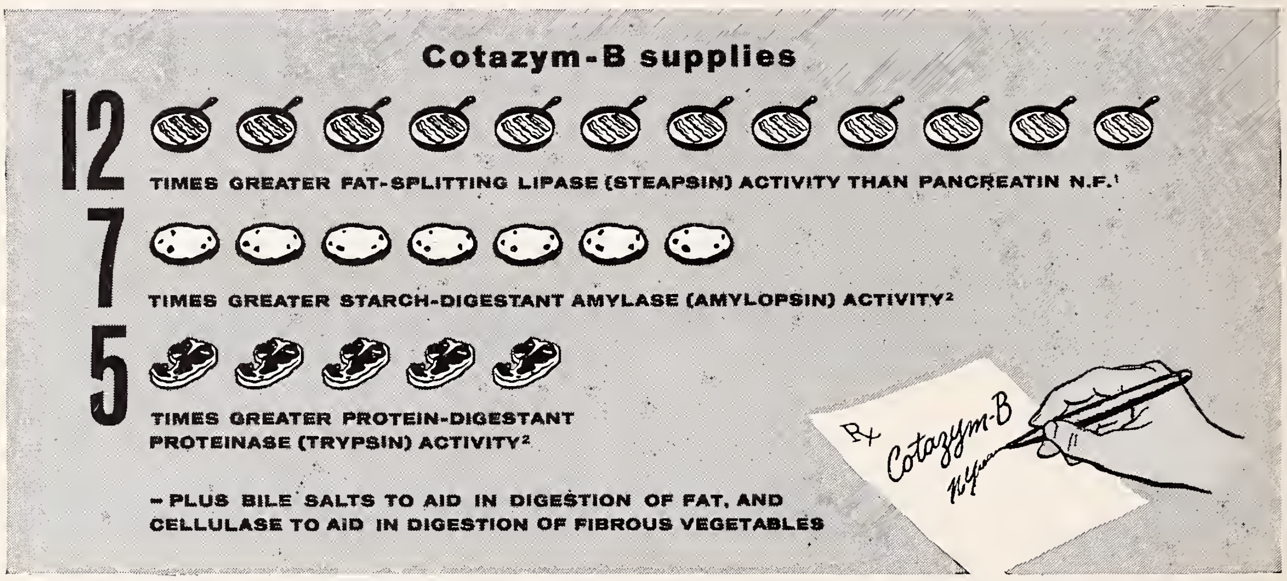

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Dosage: 1 or 2 tablets with water just before each meal.

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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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In Memoriam

ROBERT P. PEARSALL

Dr. Robert P. Pearsall, 86, Virginia physician, died at his home February 9th, after a brief illness. Dr. Pearsall was born in Port Byron, Illinois, and obtained his degree in medicine at the Rush Medical College in Chicago.

In 1904 he came to Virginia where he was affiliated with the late Dr. C. B. Lenont. After serving in the Army Medical Corps during World War I, Dr. Pearsall returned to the Range and continued practicing at the clinic until his retirement.

Dr. Pearsall was a 50 Club and life member of the Minnesota State Medical Association and the Range County Medical Society. He was also a member of the American Medical Association, served as Virginia's health officer until his retirement, was a member of the Ancient Free and Accepted Masons and Eveleth Commandery No. 35, Knights Templar.

He is survived by his two sons and two daughters.

JOSEPH W. PREISINGER

Dr. Joseph W. Preisinger, 87, formerly of Renville, died March 2nd at Dallas, Texas. Born in New Ulm, Dr. Preisinger was a graduate of the University of Minnesota Medical School.

He was a 50 Club and life member of the Minnesota State Medical Association and the Renville County Medical Society and a member of the American Medical Association.

He is survived by his two sons and two daughters.

FRED A. THYSELL

Dr. Fred A. Thysell, 71, Moorhead physician, died January 18, after a prolonged illness. He was born in Hawley and obtained his degree in medicine at Jefferson Medical College in Philadelphia. Dr. Thysell practiced medicine in Hawley, Minnesota, and Rhinelander, Wisconsin before going to Moorhead where he practiced medicine for 28 years before his retirement in 1947.

Dr. Thysell was on the staffs of St. Lukes, St. John and St. Ansgar hospitals, a member of the Moorhead Chamber of Commerce, and a member of the Moorhead Rod and Gun Club. He was also a member of the Clay-Becker County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife, three daughters, and two sons, Dr. Nels John Thysell of California and Dr. Harold Robert Thysell of Crookston. Doctor Vernon Duane Thysell of Hawley and Doctor Desmond Milton Thysell of Minneapolis are nephews.

WILLIAM T. PEYTON

Dr. William T. Peyton, 70, former head of the University of Minnesota Medical School's Neurosurgery Division, died March 3rd, following a heart attack. He was born in Traverse County and obtained his degree in medicine at the University of Minnesota.

He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association, and the American Medical Association. Dr. Peyton also was a member of the Western Surgical Association of Minneapolis, the St. Paul Surgical Society, Minnesota Society of Neurology and Psychiatry, Minnesota Pathology Society, American Board of Neurosurgery, Society of Neurological Surgeons, American Academy of Neurology and the Harvey Cushing Society.

He is survived by his wife, three daughters, and a son.

RAYMOND H. BEECH

Dr. Raymond H. Beech, 55, St. Paul physician, died suddenly February 20, in his home. He was born in Chengtu, China, of missionary parents and obtained his degree in medicine at Northwestern University.

Dr. Beech was a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association. He served on the staffs of Mounds Park, St. Joseph's and St. John's hospitals.

He is survived by his wife, a daughter, and three sons.

OLIN W. ROWE

Dr. Olin W. Rowe, 80, Duluth's first pediatrician and founder of the Duluth Clinic, died February 20. He was born at Benton Harbor, Michigan, and obtained his medical degree from the University of Minnesota.

Dr. Rowe was a member of the American Academy of Pediatrics and the American Medical Association. He was a 50 Club and life member of the Minnesota State Medical Association and the St. Louis County Medical Society.

He is survived by a son and daughter.

PETER E. PETERSON

Dr. Peter E. Peterson, 69, practicing physician in Minneapolis, died February 15, after being in ill health for some time. He was born in Frost, Minnesota, and obtained his doctor of medicine degree from the University of Minnesota.

Dr. Peterson was a member of the Hennepin County Medical Society, Minnesota State Medical Association and American Medical Association. He was a member of the staff of both Swedish and St. Barnabas hospitals.

He is survived by his wife, daughter and a son.

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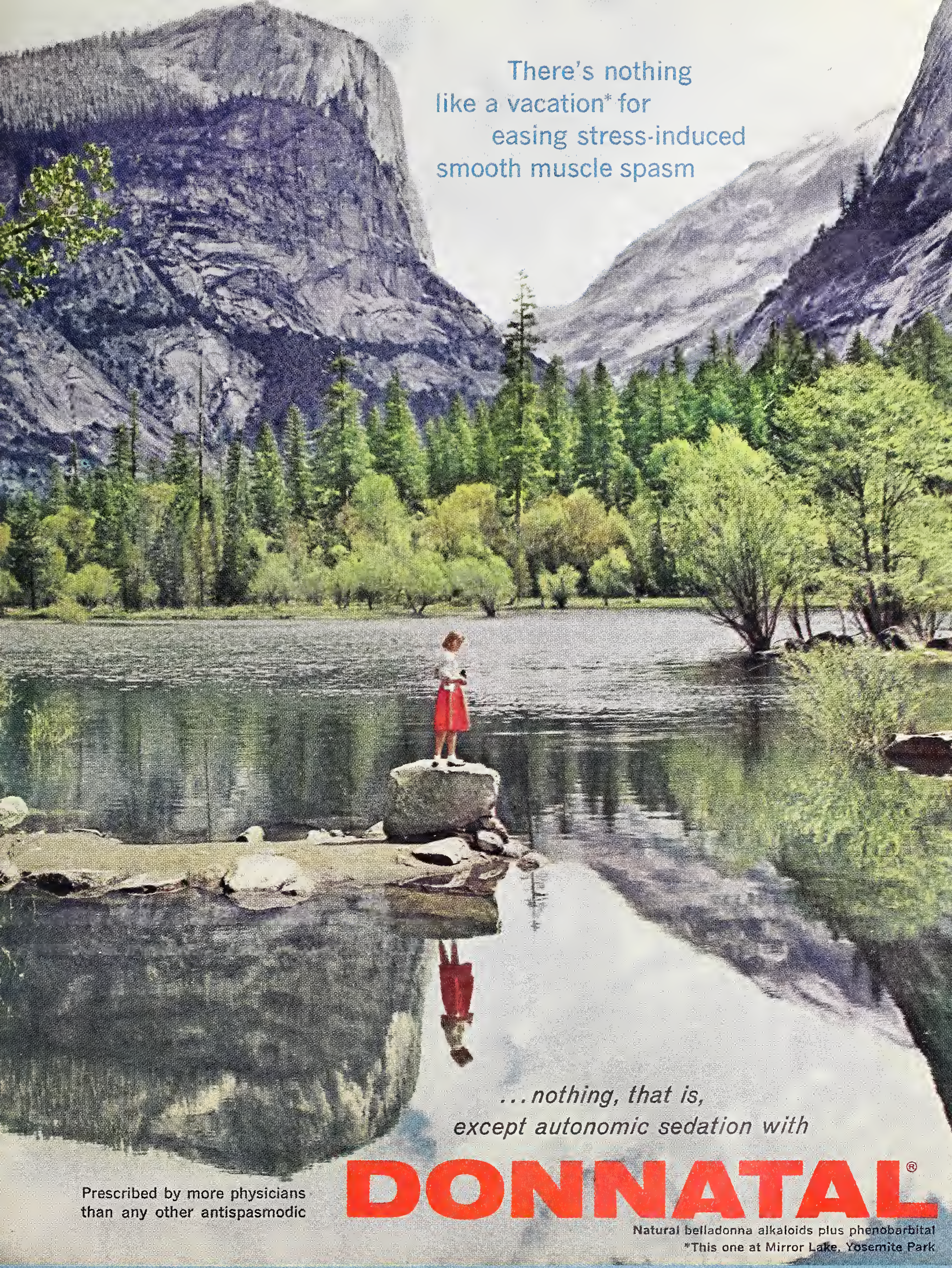

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muscle relaxatio

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—**for dramatic promptness:** ROBAXIN INJECTABLE usually provides relaxation of painful spasm *in minutes.* Clinicians have reported that it is "effective in producing immediate relaxation,"[7] and brings about "dramatic relief of pain and spasm" within 15 to 20 minutes.[3]

In each 10-cc ampul Methocarbamol (Robins) 1.0 Gm.

—**for prolonged use with safety:** ROBAXIN TABLETS safely maintain relief of spasm *without drowsiness.* "The effect does not wax and wane,"[4] and continued administration shows "no deleterious effect on normal muscle tone."[6]

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Phenacetin	97 mg.	Hyoscyamine sulfate	0.016 mg.
		Phenobarbital (⅛ gr.)	8.1 mg.

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References: 1. Carpenter, E. B.: South. M. J. 51:627, 1958. 2. Hudgins, A. P.: Clin. Med. 8:243, 1961. 3. Lamphier, T. A.: J. Abdomin. Surg. 3:55, 1961. 4. Levine, I. M.: Med. Clin. N. America 45:1017, 1961. 5. Meyers, G. B., and Urbach, J. R.: Penna. M. J. 64:876, 1961. 6. Perchuk, E., Weinreb, M., and Aksu, A.: Angiology 12:102, 1961. 7. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 8. Schaubel, H. J.: Orthopedics 1:274, 1959. 9. Steigmann, F.: Am. J. Nursing 61:49, 1961.

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"... a high potential for prompt relief ..."[8]

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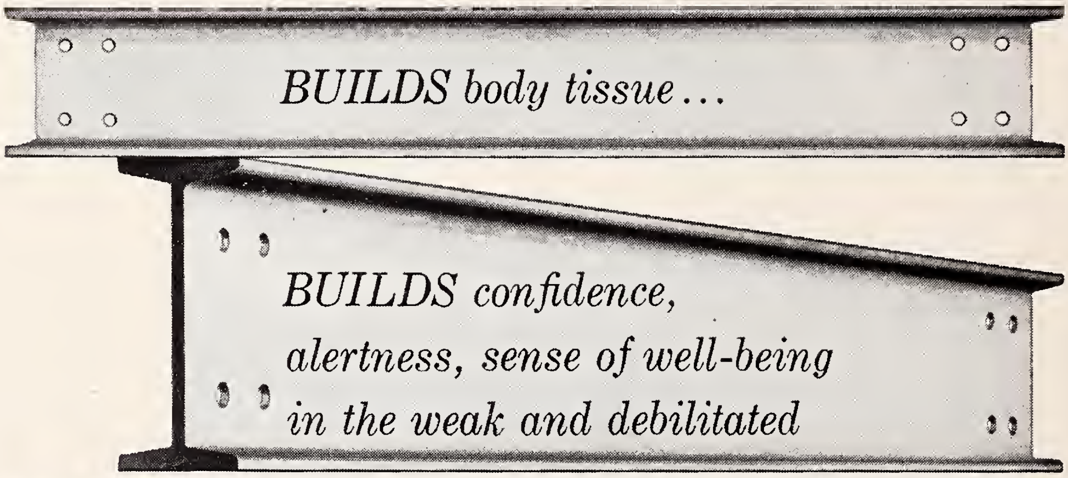
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*animal data

Complete bibliography and literature available on request. Before prescribing, consult literature for additional dosage information, possible side effects and contraindications.

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Physician's Diary

Dr. Walter C. Stilwell, surgeon at the Mankato Clinic, has retired from practice at the clinic.

* * *

Dr. R. G. Gildersleeve, Watertown, has been elected to membership in the American Society of Abdominal Surgeons.

* * *

St. Joseph's Hospital staff appointments in Brainerd are: **Dr. Maurice Meller,** Chief of Staff; **Dr. John B. O'Leary,** vice chief of staff, and **Dr. Robert W. Poppie,** secretary-treasurer.

* * *

Dr. E. Ostergaard, formerly of Rock Point Mission, Chinle, Arizona, has set up a practice in Elbow Lake, Minn.

* * *

Dr. Cecil A. Warren, St. Paul physician and surgeon, is in the first violin section of the Talmud Torah 29-year-old symphony orchestra.

* * *

Dr. William H. Remine, head of a section of general surgery in the Mayo Clinic, has been elected a member of the Society of Medical Consultants of the Armed Forces.

* * *

Dr. Lynn C. Stoker has joined the Albert Lea Clinic.

* * *

Dr. Richard Moyer, heart specialist of the Mesabi Clinic, Hibbing, was guest speaker at the recent meeting of the Cherry School and Community Club.

* * *

Dr. James Erickson has joined **Dr. George Martin** at the Starekow Clinic in Thief River Falls.

* * *

International Falls Parent-Teachers Association heard **Dr. Frank Kiesler,** superintendent of Tri-county Mental Health Center, Grand Rapids, speak on "Child-Parent Relation in Regard to Teenage Marriage from a Psychiatrist's Viewpoint."

* * *

Dr. Vincent Ryding, Mountain Lake physician, was selected for membership in the American Society of Abdominal Surgeons.

* * *

Dr. William E. Macklin, Jr., Mound, was among the 100 radiologists to be made a fellow of the American College of Radiology at the group's annual meeting.

* * *

Dr. Earl H. Wood of Mayo Clinic was honored at the first annual heart researchers' reception and dinner meeting in Minneapolis.

* * *

Dr. Lewis S. Jordan, Granite Falls, was recently honored for a lifetime devoted to stamping out tuberculosis by the Jaycees of that area.

* * *

Dr. Earl E. Elkins, head of the section on physical medicine and rehabilitation at Mayo Clinic, is in Sydney, Australia, fighting a polio epidemic there.

* * *

Dr. Paul Keith of Milaca was recently named to the Princeton Community Hospital staff. Others on the staff are **Doctors William F. McManus, N. B. Metcalf** and **A. T. Kapsner** of Princeton, **A. B. Roehlke, Gordon Tesch** and **R. E. Sommer** of Elk River, and **C. S. Donaldson** of St. Cloud.

* * *

Dr. Ernst Simonson, professor of physiological hygiene at the University of Minnesota, was the guest essayist at the seminar on electrocardiography at the Mayo Clinic, Rochester.

* * *

Dr. James R. Bloyer of Mankato has left Mankato for San Francisco where he will establish a practice.

* * *

Dr. A. M. Watson, who has been the health officer for the Village of Upsala for many years, in addition to his practice in Royalton, has retired.

* * *

Drs. Luther F. Davis, Leland G. Reichelt and **Duane E. Ness** have formed a new corporation for the ownership of the Davis Clinic in Wadena. **Dr. L. T. Davis** will continue to be associated with the clinic.

* * *

Construction of a six-story pediatric rehabilitation hospital at the University of Minnesota has been approved. This will give the University a rehabilitation facility for severely handicapped children.

* * *

Dr. Rudolph Skogerboe of Karlstad was elected president of the Red River Valley Medical Society at its recent meeting held in Crookston. Other officers elected: **Dr. Arnold Berg** of Roseau, vice president, **Dr. R. O. Sather** of Crookston, secretary-treasurer, and **Dr. George Martin** of Thief River Falls to the house of delegates of the Minnesota State Medical Association.

* * *

Dr. Henry E. Michelson, Professor Emeritus of Dermatology, University of Minnesota was the recipient of the Gold Medal Award given by the American Academy of Dermatology.

* * *

Dr. Elizabeth Bagley became chief of staff and **Dr. E. Irvine Parson** was named chief of staff-elect of St. Luke's Hospital medical staff in Duluth recently.

* * *

Dr. Ralph L. Olsen has been elected chief of the medical staff of Bethesda Hospital. **Dr. John Sterner** was elected vice chief of staff and **Dr. W. W. Amerongen,** secretary-treasurer.

* * *

Dr. Paul C. Leck has retired from his practice of medicine in Austin and plans to either stay in Austin or take up residence in California.

* * *

Dr. Charles W. Mayo will receive the 10th annual humanitarian award by the Beth Israel Synagogue of Omaha, Nebraska, in April. The award is made to an individual who has distinguished himself in the field of human welfare.

* * *

Dr. Ralph Hirschowitz of Johannesberg, South Africa, joined the medical staff of the Fergus Falls State Hospital recently.

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Doctors Victor Lorber and **Lewis W. Wannamaker** of the University of Minnesota and **Dr. Earl H. Wood** of the Mayo Clinic were honored recently by the Minnesota Heart Association and given grants enabling them to spend the rest of their lives on heart research.

* * *

The new officers for the Range Medical Society are: **Dr. R. T. Kelly,** Grand Rapids, president; **Dr. R. E. Barnes,** Aurora, president-elect, **Dr. H. W. Johnston,** Virginia, vice president, and **Dr. G. B. Ewens,** Virginia, secretary-treasurer.

* * *

Dr. Jesse E. Edwards, of St. Paul, is author of "An Atlas of Acquired Diseases of the Heart and Great Vessels" which has recently been published. Collaborators in preparing the book were **Drs. Henry N. Neufeld, Raymond D. Pruitt, Robert L. Parker** and **Howard Burchell.** **Mrs. Herman Miller** is the new president of the Woman's Auxiliary to the Mower County Medical Society.

* * *

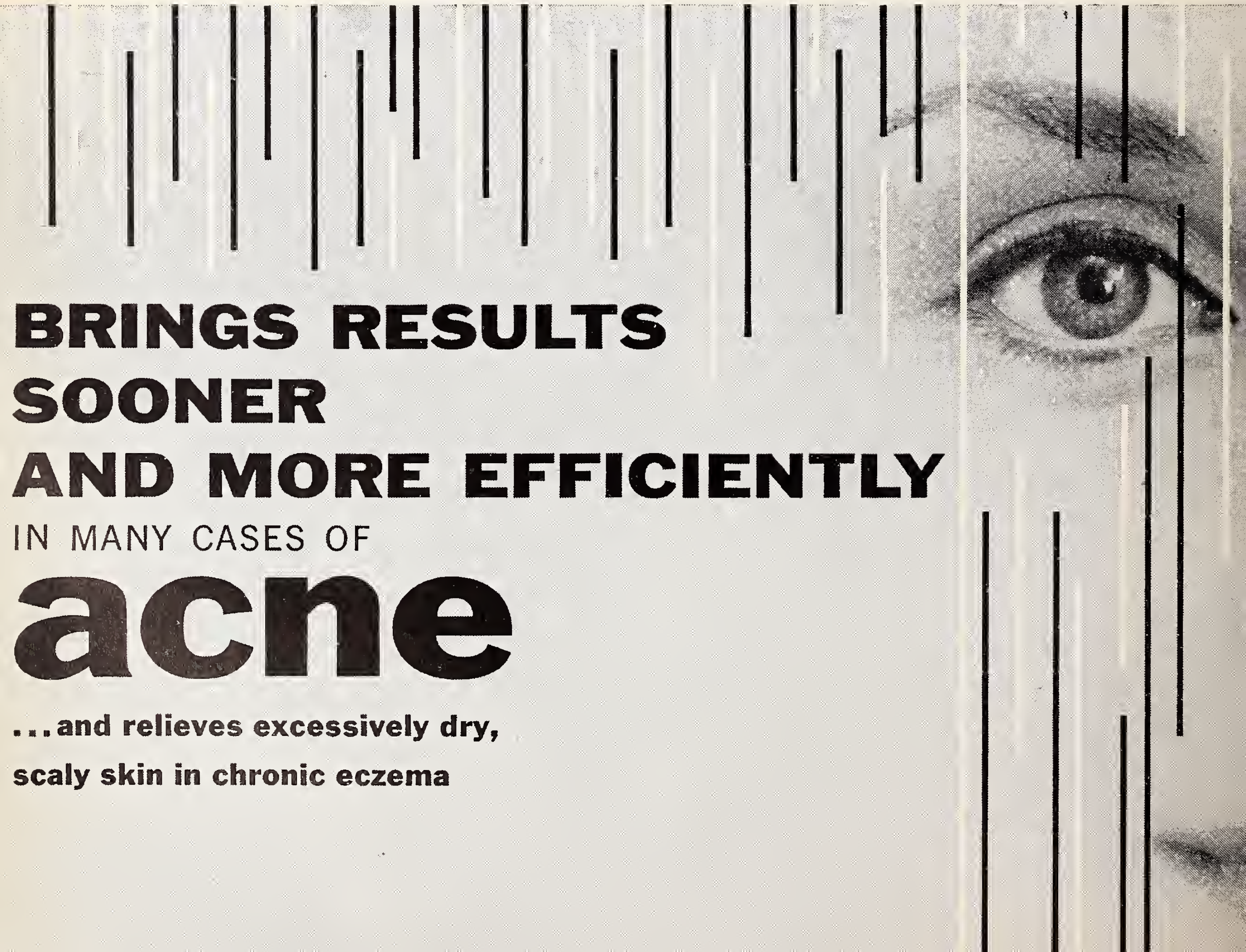
Dr. Vernon Vix recently associated with the Worthington Clinic will accept a radiology residency at the University of Minnesota and the Veterans Hospital in Minneapolis. He will be replaced at the clinic by **Dr. Arthur Amick.**

* * *

Dr. Jerome T. Grismer, St. Louis Park, spoke at the monthly meeting of the Washington County Medical Society in Houlton.

* * *

Dr. Laurence F. Greene, consultant in urology in the Mayo Clinic, delivered the Charles B. Taylor Lecture at the University of Oklahoma Medical Center.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Board of Medical Examiners

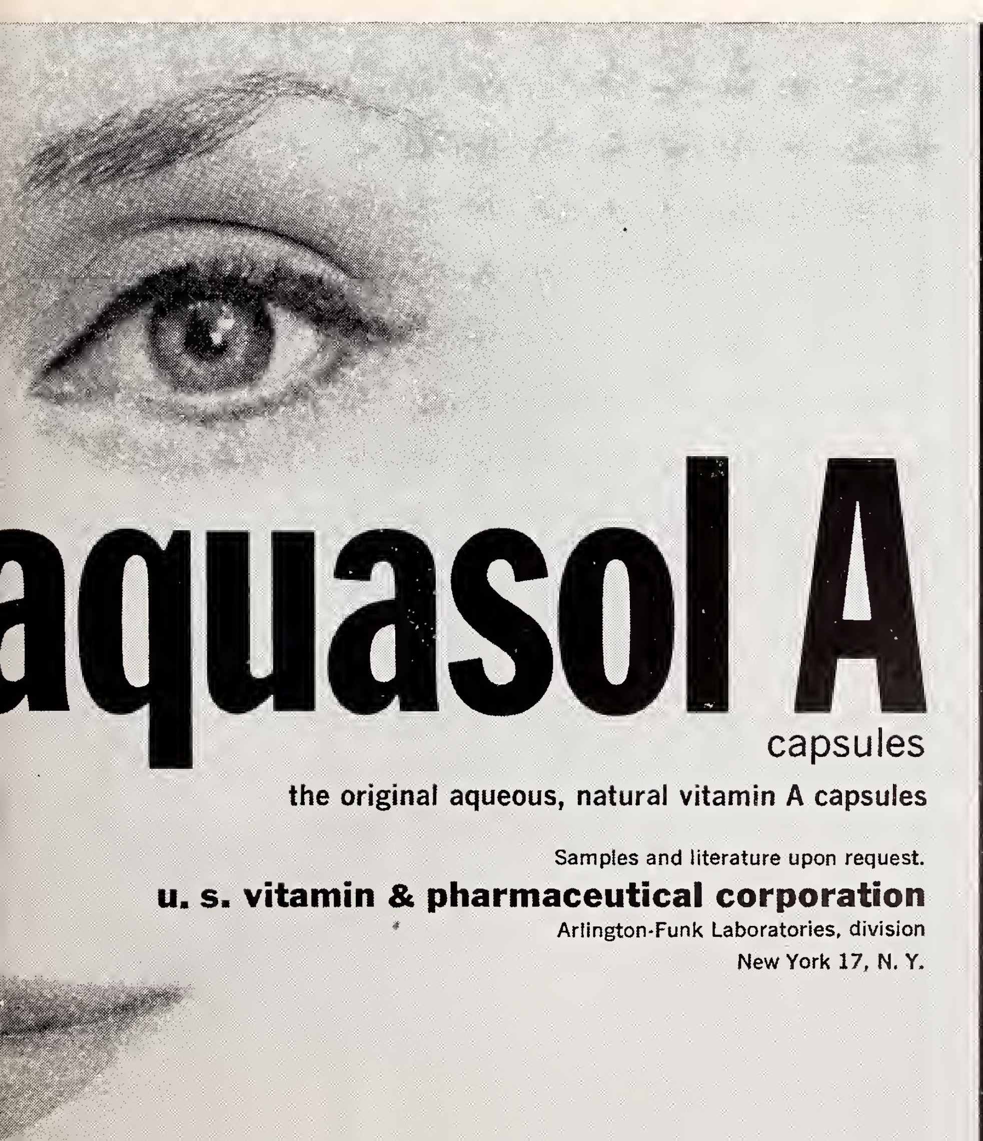
TWO DULUTH MEN GIVEN PRISON TERMS IN ABORTION CASE

Re: State of Minnesota vs. Charles R. Buehre and Basil Jarvis

On December 15th, 1961 Charles R. Buehre, 35, 518 North 17th Ave. E., Duluth, Minnesota, and Basil Jarvis, 809 E. First St., Duluth, were sentenced to prison terms by the Hon. William K. Underhill, Judge of the District Court of St. Louis County, both of the defendants having previously entered guilty pleas in connection with an abortion attempted upon a 25-year-old woman. Judge Underhill sentenced the defendant Jarvis to serve a term of not to exceed four years in the State Prison at Stillwater, Minnesota, pursuant to his plea of guilty to the crime of abortion entered on October 5th, 1961. The defendant Buehre, who furnished the abortion instruments, had pleaded guilty on October 9th, 1961, to the crime of giving an instrument to produce miscarriage. Judge Underhill also sentenced the defendant Buehre to a term of not to exceed four years in the State Prison but the execution of the sentence was stayed on condition that the defendant serves the first year of commitment at the St. Louis County Work Farm. The Court then placed Buehre on probation after he is released from the Work Farm.

The defendants, neither of whom has any medical training, were arrested at a downtown Duluth hotel shortly before midnight on June 1st, 1961. A number of instruments which were capable of being used for the performing of abortions were found in their possession. A subsequent investigation of the case involving the 25-year-old woman disclosed that the defendants had gained her confidence by telling her that Jarvis was a Chicago doctor who had worked on numerous similar cases. Neither the defendant Jarvis, an unemployed railroad worker, nor the defendant Buehre, a specialty salesman, holds a license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secy.



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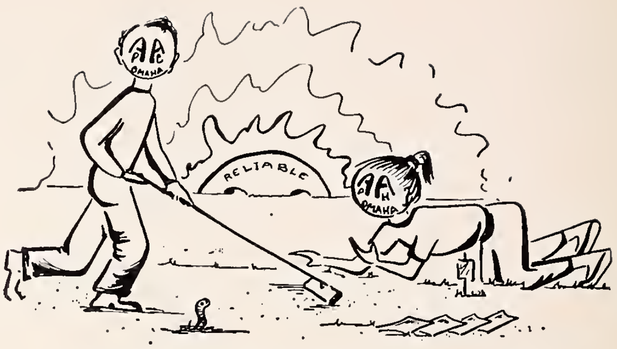

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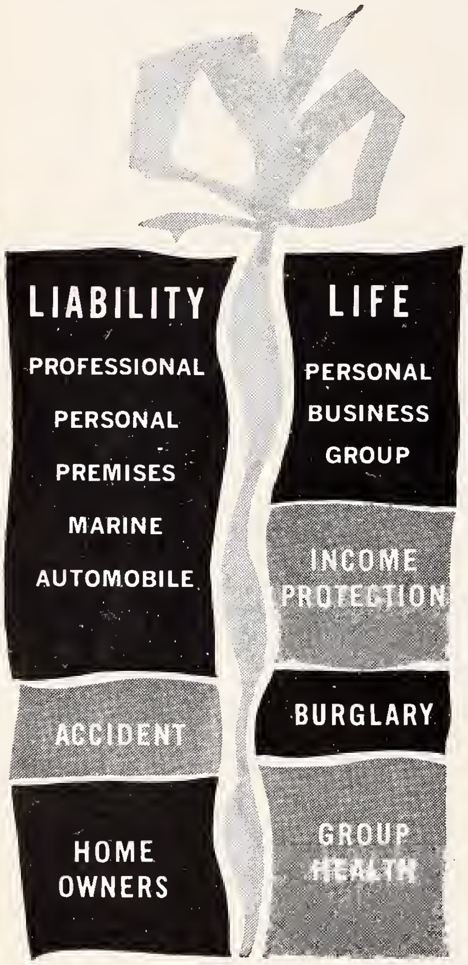
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President's Letter

THE MEDICAL STUDENT IN MINNESOTA

The future needs in the United States for well-trained physicians will be great. Projections of current rates of increase in our population suggest that this is so. Moreover, the changing complexity of medicine necessitates greater numbers of personnel if all the benefits of our current knowledge in the diagnosis and treatment of disease are to be exploited to the utmost. More people are seeking medical care; this is good. Our older people require greater medical attention, yet the very fact that we have so many old people in good health is in part a tribute to medical science.

Provision of enough physicians to satisfy the expanding demand has caused much concern to physicians, educators and the public alike. Each of the 87 medical schools in this country has reveiwed its facilities for training medical students and has expanded these where possible. Plans are now being made for five additional medical schools in established universities. The feasibility of organizing additional medical schools in several other areas, including at least one in our state, is under active consideration. It is not, however, the stone-and-steel facet of schools which I wish to discuss. It is, rather, our problem of procuring an adequate number of qualified medical students.

The number of applicants for entrance into medical schools in the United States has decreased since the post-World War II years. The sole exception to the trend was a flurry of interest after the Korean conflict. Applicants for entrance into medical schools had decreased in 1960 to 14,397, a figure about two thirds of the number for the corresponding group a decade earlier; there were but 1.7 applicants for each opening by 1960. The decrease has not been experienced uniformly by all schools, however. Those institutions situated in more densely populated areas have fared better. Moreover, private schools which generally accept more applicants (53.7 per cent) from out of state have been better than those publicly owned schools which may take fewer (12.5 per cent) applicants from outside their state. Incidentally, about 90 per cent of students embarking upon a program of medical education ultimately receive the degree of doctor of medicine.

The success with which students are being procured for attendance at our medical school is now steadily being enhanced. Although Minnesota has remained among the top 25 colleges and universities in the matter of producing the largest number of places for beginning students, we have heard Dean Howard express anxiety about the question of whether the number of suitable students will continue to be adequate. This concern became manifest in 1958, when the number of students accepted for the freshman class was being increased from 125 to 150.

However, at the University of Minnesota the number of applicants for entrance into medical school has grown steadily over the past 4-year period. Likewise, data concerning the capability of members of the new freshman class are gratifying to see. Although there has always been a fine record of aptitude among medical students in the University of Minnesota, the capacity of those now entering seems to be greater. These facts would suggest that now the youth of our state indeed are being well motivated toward medicine.

We can feel pride that in Minnesota we are providing superior training to a large and capable group of medical students. This increase of desirable applicants for medical training which we have observed locally is said to be observable nationally, although it is still too early for the impression to be certain. But despite improved prospects for the quality of medical students in Minnesota our job of active recruitment of capable young men and women for medical careers is an important one which we must continue.

Yours sincerely,

Haddon Carryer

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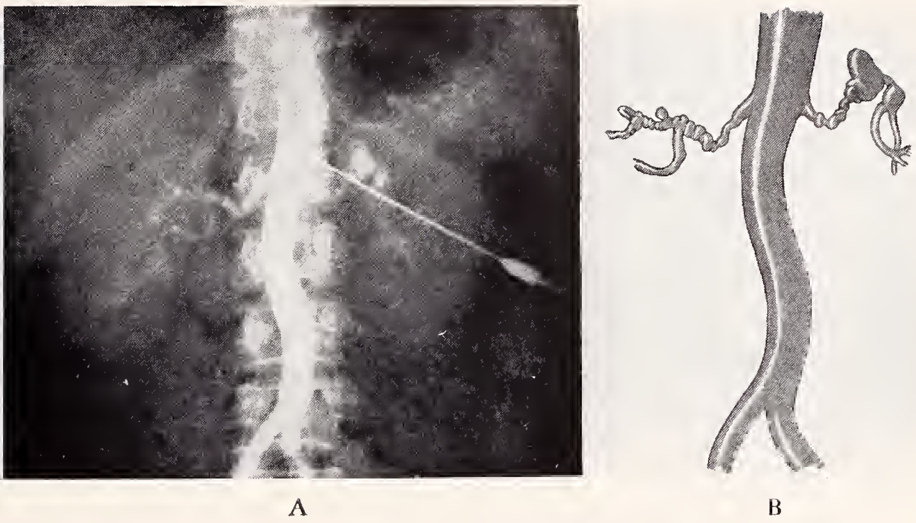
Fig. 1. (A.) Translumbar aortogram in a 41-year-old woman with blood pressure 230/120 mm. Hg. (B.) The diagram reveals the characteristic appearance of intimal and medial fibromuscular hypertrophy with multiple areas of stenosis, poststenotic dilatation, and aneurysm formation. Due to the extensive nature of this process surgical treatment was not recommended in this case.



RENOVASCULAR HYPERTENSION

Surgical Considerations

All patients with hypertension must now be studied for renal artery occlusion. Over 80% of patients operated upon for renovascular hypertension have a good to excellent result. Arteriography is the principle means of demonstrating those patients likely to respond to surgical improvement of flow to the renal parenchyma.

DENTON A. COOLEY, M.D.**
GEORGE C. MORRIS, JR., M.D.**
Houston, Texas

During the past twenty-five years efforts at surgical treatment of hypertensive states were extensive, but only a few clear cut indications for surgery were developed during this period. These indications include coarctation of the aorta, various adrenal lesions including phaeochromocytoma, Cushing's disease and primary aldosteronism, and certain renal diseases usually associated with unilateral lesions causing reduced function. This latter indication for operation produced highly variable clinical results leading to general discouragement with this attack upon hypertension. The concept of a renovascular etiology of hypertension was first elucidated in 1932 when Goldblatt published results of his classic experiments which clearly demonstrated that stenosis of the main renal artery produced hypertension in the experimental animal. These observations aroused interest in nephrectomy as a treatment for hypertension using as a criterion for selection of patients the presence of a poorly functioning kidney. Functional tests used in selection of patients for operation consisted of intravenous urogram and differential split function studies by individual ureteral catheterization. Unfortunately lack of renal arteriography led to poor understanding of the pathogenesis of the hypertension and improper selection of patients. Moreover, technics for reconstructive arterial surgery were lacking. Although in many instances operation was successful, the results usually were unpredictable and depended in large measure upon chance.

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*From the Cora and Webb Mading Department of Surgery, Baylor University College of Medicine, Houston, Texas

**Supported in part by grants from the American, Texas and Houston Heart Associations and by a grant from the U. S. Public Health Service.

Presented at the Methodist Hospital Symposium on "Hypertension," Minneapolis, Minnesota, September 23, 1961.

Experience of the past few years has clarified many of the previously held misconceptions related to renovascular hypertension. Now it is recognized that renal artery stenosis is not rare and, furthermore, that relatively minor stenosis of a renal artery or even a segmental branch may stimulate the kidney to produce **renin.** Another important feature of renovascular hypertension revealed by recent studies is the so-called "protective" effect of arterial stenosis upon the histologic appearance of the kidney. Thus, in the presence of hypertension of many years duration the kidney on the side of the stenosis may be histologically normal because of the low arterial pressure distal to the stenosis, whereas on the opposite side the kidney shows manifestations of nephrosclerosis. The microscopic lesions in the contralateral kidney reflect the degenerative effects resulting from the general systemic arterial hypertension, and these lesions themselves are etiologically significant in the hypertensive state. To remove the ipsilateral kidney under these circumstances would sacrifice the only normal renal tissue in the patient and presumably could hasten the onset of renal insufficiency by placing complete dependence upon the contralateral nephrosclerotic kidney.

Not infrequently in the past this poorly functioning ipsilateral kidney with arterial insufficiency was removed surgically leaving behind the oversized, nephrosclerotic kidney. This dilemma has been largely relieved with the routine use of preoperative aortography in patients undergoing operation. Selection of patients with bilateral renal artery stenosis previously was unsatisfactory because renal function could be reduced in both kidneys to a moderate degree, and the studies would not reveal which kidney should be removed. Indeed, if combined renal insufficiency was noted, neither kidney could safely be sacrificed. With the diagnostic assistance of aortography the presence of bilateral renal stenosis is readily demonstrated, and a logical surgical attack upon both vascular lesions may be planned. These new concepts of etiology of hypertension have introduced a new era in surgical treatment of renovascular hypertension. The medical profession is challenged anew to detect cases suitable for surgical care.

Several pathologic processes may produce renal artery stenosis. Usually the lesion is atherosclerotic and, therefore, occurs mostly in patients more than 30 years old. The orifice of the renal artery is known to be one of the sites of predilection in the arterial bed for development of atherosclerotic occlusion. Although in most instances the stenosis is partial or incomplete, a kidney with completely occluded renal artery may also lead to hypertension so long as there remains functional renal tissue made viable by collateral arterial supply. Another rather unique arterial lesion producing renovascular hypertension in younger patients is so-called intimal and medial fibromuscular proliferation. The characteristic appearance on arteriography consists of multiple areas of arterial narrowing with post-stenotic dilatation beyond each constricted point (Fig. 1). Frequently small aneurysms are present probably due to the turbulent arterial flow. Pathogenesis of this lesion remains obscure, but it probably is acquired and degenerative in character although a basic deficiency in the arterial wall may be the underlying cause. In many patients with renovascular hypertension multiple accessory arteries are present, and these may be important in etiology of hypertension if the arterial blood flow is reduced. Renal artery aneurysms may also cause hypertension due to compression or stenosis of the artery at, or just beyond, the lesion.

In selecting patients with hypertension for surgical treatment adequate screening plays an increasingly important role in light of the newer concepts of treatment. Diagnostic studies should exclude the presence of coarctation of the aorta and adrenal lesions. Studies of renal function which are used in detection of more common renal lesions produce data of questionable value in diagnosis of renovascular hypertension. Split function tests for comparison of salt and water excretion in the two kidneys may provide evidence of reduced function on one side but do not indicate whether the impairment is due to renal artery obstruction. Intravenous urography has the same disadvantage. Renograms using Iodine$_{131}$ tagged Hippuran may give a better indication of individual renal flow and indicate when aortography is necessary. Although, with further improvement in technic, renograms may give more accurate and reliable information, at present these studies are subject to frequent error.

Thus, the physician is often left with a decision based upon clinical evidence as to which patients should have aortography with the associated risks involved. Actually the risk of aortography is slight if small volumes of contrast media are used, and in our experience adequate visualization of renal arteries is obtained injecting 10-12 c.c. of 70 per cent Urokon into the promimal aorta by a translumbar routine. General anesthesia with adequate hydration of the patient we believe is important in protecting the kidney against damage and reduces the risk of the procedure to a minimum. Clear demonstration of the renal arteries is necessary to make the diagnosis of renal artery stenosis. In most instances renal arterial stenosis ultimately produces a post-stenotic dilatation which is of diagnostic significance. Bilateral renal artery stenosis may also be revealed by aortography. One might conclude that aortography should be performed in any patient with significant diastolic hypertension who would present a satisfactory surgical risk if a renovascular lesion were found.

In selecting patients for operation consideration must be given to the fact that not all patients respond favorably to sudden reduction in blood pressure. For example, a patient with severe cerebrovascular insufficiency may respond unfavorably to a reduction in blood pressure. For the same reason reduction in blood pressure may be harmful in the presence of advanced coronary disease. In general, patients over 65 years of age with hypertension of long duration are not favorable candidates because of coexisting arterial disease and the possibility of associated nephrosclerosis in the contralateral kidney. Finally, the presence of any condition which would contraindicate general anesthesia and major abdominal surgery should be a contraindication to operation.

Surgical Technic

When surgical treatment for renal artery stenosis is undertaken, exploration of the vessels is performed under general anesthesia with a standard mid-line abdominal incision. Thorough palpation of the kidneys and adrenal glands should be performed in a systematic manner along with palpation of other abdominal viscera. The renal arteries are exposed by reflecting the distal duodenum and ligament of Treitz to the right side. Frequently the stenosis of the vessel may not appear significant when exposed and palpated at operation. Often a pulsation is palpable in the artery distal to the stenosis. In such instances pulse tracings should be made. Comparison of the tracing in the abdominal aorta with that distal to the lesion reveals the pressure gradient which is responsible for the hypertension. Blunting of the systolic peaks on the tracing in addition to a pressure gradient appears to be an adequate stimulus for production of hypertension also. Either an endarterectomy with patch graft or an aorto-renal bypass should be used. For the majority of stenoses which are located at the renal ostia endarterectomy is the preferred method of reconstruction (Fig. 2). In this technic an incision is made longitudinally into the renal artery extending across the ventral surface of the aorta. The occluding arteriosclerotic plaque is excised, and a path of synthetic material is sutured over the arteriotomy to prevent subsequent stenosis (Fig. 2). If the stenosis is bilateral, the incisions in both renal arteries may be joined by an extension completely across the aorta. Repair of the incision would consist of a single long patch covering the entire incision in the aorta and renal

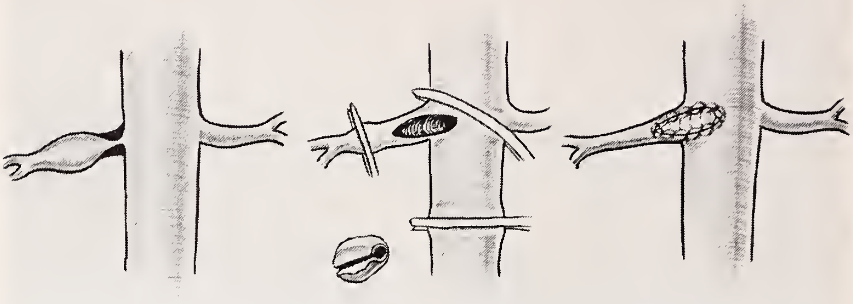

Fig. 2. Drawings showing technique of renal endarterectomy. The atherosclerotic plaque at the renal orifice is removed in the proper cleavage plane in the outer medial layers. The arteriotomy is repaired using a patch of Dacron cloth to prevent subsequent stenosis at the suture line.

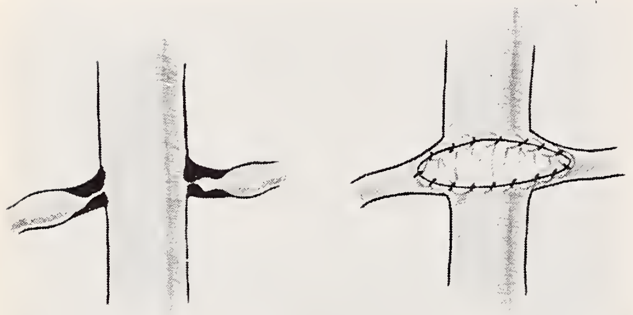

Fig. 3. Drawings showing technic of bilateral renal endarterectomy. A transverse incision is made across the abdominal aorta entering both renal arteries. After the occluding plaques are removed, the incision is repaired with a single Dacron patch.

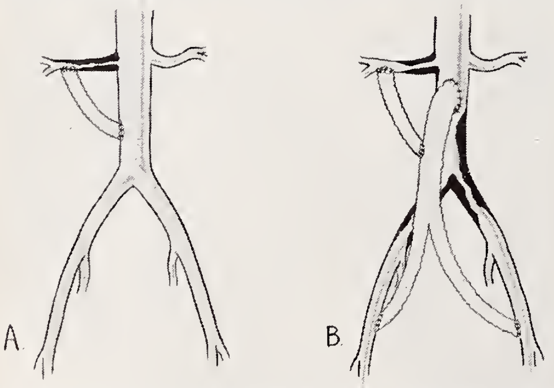

Fig. 4. Drawings showing bypass technics which are suitable for repair of the right renal artery when endarterectomy is made difficult by the overlying inferior vena cava. In (A.) an aorto-renal bypass graft was performed connecting the graft to the distal portion of the renal arteries. In (B.) aorto-iliac occlusive disease was also present requiring a bypass to both femoral arteries. Renal artery bypass was performed from the aortic graft.

arteries (Fig. 3). Bypass grafts are often used in operations upon the right renal artery where the proximal portion of the vessel is obscured by the overlying inferior vena cava (Fig. 4A). The bypass may be combined with aortic excisional therapy for aorto-iliac occlusive disease, and the renal graft is sutured to the side of the aortic replacement (Fig. 4B). In each anatomic problem encountered at operation the emphasis in technical repair should be upon restoration of pulsatile flow in the renal artery.

Results

Until the present time we have operated upon 125 patients with evidence of renovascular hypertension. In 80 per cent results were considered good with significant reduction in blood pressure to near normal levels. To ascertain normal systolic blood pressure in our patients 5 mm. Hg was added to 135 mm. Hg for each decade over 30 years of age. Maximal normal diastolic pressure at any age was 90 mm. Hg. In 8 per cent of patients reduction in blood pressure was less striking, but in most of these the response to antihypertensive agents was gratifying. Of the remaining 12 per cent of patients, 6 per cent were unimproved and 6 per cent subsequently died. Renal function studies in the patients having good results were interesting in that the kidney which was revascularized usually functioned better than the opposite one, and total renal function was significantly improved. Aortography was performed in many patients following operation providing an excellent means of correlating clinical results with improvement in renal artery flow (Fig. 5).

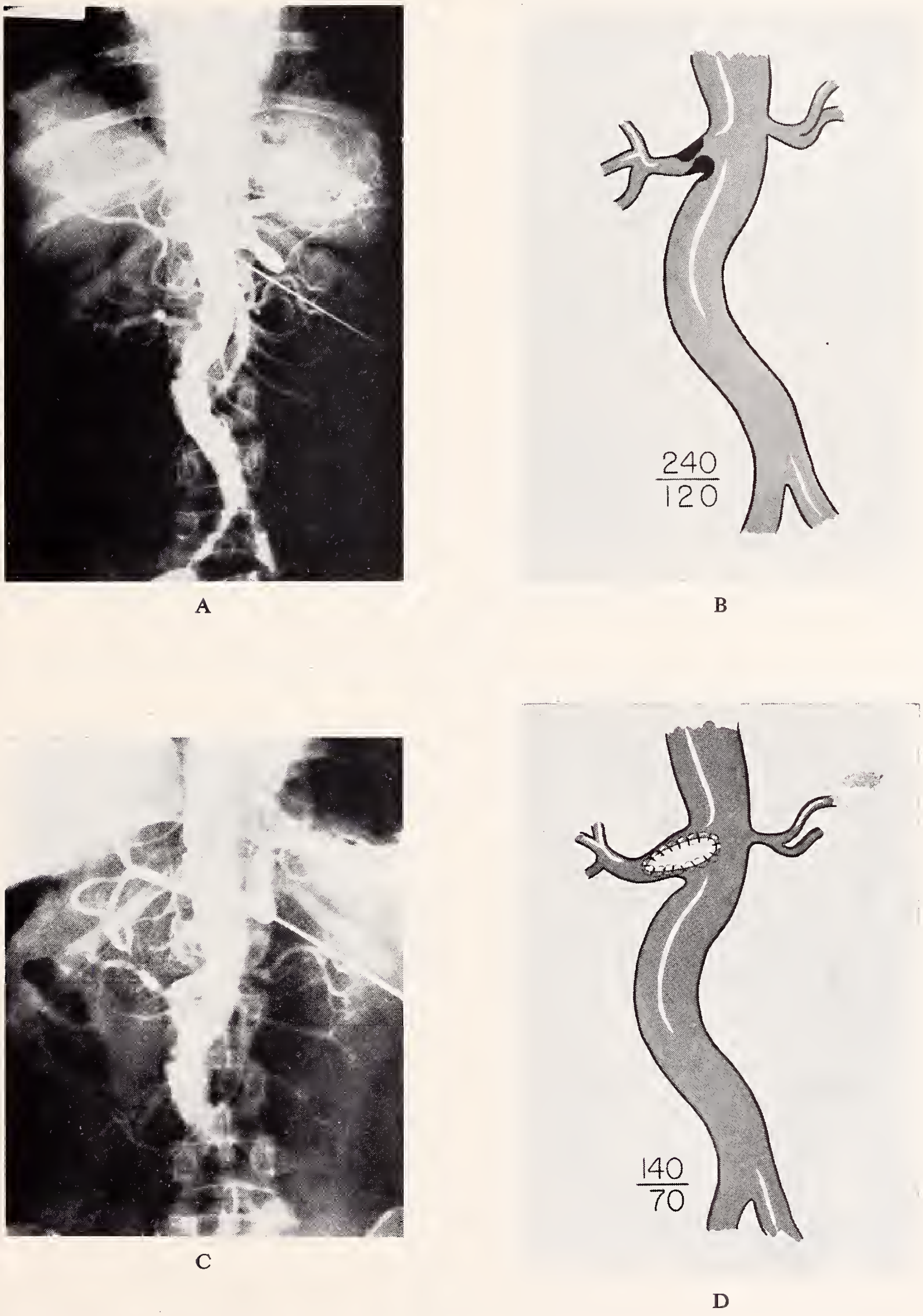

Fig. 5. Arteriograms before and two weeks after operation in a 57-year-old man with right renal artery stenosis. (A. & B.) The aortogram before operation reveals stenosis of the artery with typical post-stenotic dilatation. (C. & D.) The aortogram after operation shows relief of the stenosis by endarterectomy and patch graft. An excellent response in the blood pressure was obtained in this patient.

Summary

Rapid strides have been made recently in both medical and surgical treatment of arterial hypertension. Growing emphasis upon arterial surgery and recognition of renal artery pathology as a cause for hypertension have stimulated interest in renovascular lesions. Aortography provides the principal means of accurate diagnosis of renal artery stenosis producing renovascular hypertension and should be recommended with increasing frequency. This type of hypertension is usually produced by atherosclerotic narrowing of the orifice of the renal artery at the aorta but may also be produced by fibromuscular hypertrophy and aneurysms. Restoration of a pulsatile flow in the artery by endarterectomy, bypass grafts, and resection of the arterial lesion will produce gratifying lowering of blood pressure in properly selected cases. In 80 percent of our surgically treated cases the results were considered to be good or excellent.

WHAT'S YOUR DIAGNOSIS?

Mr. P. B., age 33, first experienced stomach upset, diarrhea, and vomiting on June 23, 1961. He was admitted to the hospital on July 7, 1961 in order to evaluate the vomiting. The studies revealed a complete pyloric obstruction as indicated by the x-rays. His hemoglobin was 18 grams. The examination and laboratory findings were otherwise noncontributory.

A week later re-x-ray of the stomach still revealed an obstruction at the pyloric end of the stomach. No ulcer could be identified but he was placed on medical management on a presumptive diagnosis of duodenal ulcer.

He was readmitted to the hospital on August 2, 1961 because of his continued symptoms and gastric bleeding. On the occasion of this admission a gastric resection was done, removing 150 grams of stomach. Exploraton at this time revealed no definite evidence of pathology and the peptic ulcer was not identified.

The postoperative convalescence was stormy. His temperature rose to 105 degrees requiring the use of a thermal blanket. He was discharged from the hospital on August 27 but was readmitted because of continued symptoms and melena. His hemoglobin was found to be 5 grams and examination revealed a sensation of fullness in the epigastrium. The temperature was elevated to 102 degrees but it was not spiking in character, though there was some fluctuation.

Re-x-ray examination revealed a mass in the subhepatic area producing some pressure on the lower third of the gastric pouch and on the proximal portion of the duodenum.

He was again explored on September 19, 1961 at which time a 6" by 8" firm, rubbery mass was found in the subhepatic region, lying in the lesser omental bursa, extending from the left border of the vertebral column across the aorta to the border of the right kidney. There was no jaundice. See answer page 571.

Shock Accompanying Myocardial Infarction

THERAPEUTIC CONSIDERATIONS

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During an acute myocardial infarction the heart will fail when there is clinical evidence of shock for several reasons: Part of the myocardium is totally deprived of an adequate blood supply, pressure is inadequate in coronary vessels to force blood through narrowed but patent coronary arteries, and the uninvolved area of the myocardium is overloaded by its increased work demands. Probably in most patients with definite shock accompanying a myocardial infarction the pathophysiologic state is improved with the use of pressor drugs to increase peripherol-vascular tone and improve coronary perfusion. The author here presents an interesting survey of treatment and possible mechanisms of response of the myocardium under these conditions.

TABLE I

*INCIDENCE OF SHOCK IN ACUTE MYOCARDIAL INFARCTION**

Definition of Shock	*Incidence of Shock %*	*Mortality Rate %*
STRICT CRITERIA	14	79
LOOSER CRITERIA	52	36

*Taken from Friedberg, C. K. Circulation 23:325, 1961.

Fifteen years ago, the best opinion felt that shock from acute myocardial infarction should only be treated supportively. It was authoritatively stated that "the blood pressure is best left where it is, and vasoconstrictor drugs should not be used."[1] Since then, our understanding of the mechanism of this type of shock has improved, and there has been a tremendous experience with more courageous treatment, particularly, the use of vasoconstrictor agents. Despite these advances, our understanding of pathogenesis is still incomplete, and there is, as yet, no definitive study to prove the efficacy of modern management. Today, after briefly reviewing the pathogenesis of shock due to myocardial infarction, I shall consider management in the light of pathogenesis and of the published clinical and experimental reports.

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Shock is seen in some 23% of patients with myocardial infarction.(2) However, as pointed out by Friedberg, the incidence is much less in those series where shock is defined strictly. This is evident from the data in Table I, which were compiled by Friedberg from 10 series totaling 2,955 cases. Note particularly, the differences in mortality rates. Beyond recognizing the relationship between a high mortality rate and strict criteria for defining shock, we need not concern ourselves further with the problem of definition until considering treatment.

Mechanisms

Since effective treatment must depend on agents to correct, insofar as possible, those effects of an infarction which cause shock, it is important to know what these effects are. The blood pressure fall must be related to one or more of the following:

1. Drop in cardiac output, because of
   a. Decreased return flow to the heart, or
   b. Inability of the heart to pump the blood returned to it in adequate amounts
2. Dilation of peripheral vessels
3. A combination of 1 and 2.

Several studies in which cardiac output was measured at the bedside by dye dilution techniques have shown that, in the large majority of cases, the pressure falls because of a fall in output.[3-6] This is illustrated by our own data which showed an average cardiac index of 1.0 L./min./m^2 in 7 patients judged clinically to be in shock from an infarct, as opposed to 1.9 L./min./m^2 in those with failure and no shock, and 2.6 L./min./m^2 in those with no signs of either failure or shock. This is in agreement with most other reports.

However, as pointed out by Agress(7) the published data show that the blood pressure is sometimes lower than one would predict for the degree of lowering of the cardiac output. Thus, out of 12 cases with shock and a low output which he collected from the literature, there was evidence of arterial constriction to raise the blood pressure in 8, but no such evidence in 4. In 2 additional cases, instead of constriction, there was actual vasodilation: The pressure was low, but the output was not greatly reduced. In 1 patient studied by us, the output was high (9.3 L./min.) 12 hours after recovery from shock with unobtainable blood pressure.[3] Stead and others reported a case with a blood pressure of 66/44 and a cardiac output of 5.3 L./min.[8] It is also apparent that in the studies of cardiac output in patients with acute myocardial infarction there is a tendency not to include patients with higher outputs, since the unavoidable trend is to select those who have been in shock for longer periods. Measurements soon after the onset of shock might reveal more instances of low blood pressure with normal or high output in patients who subsequently either recover from hypotension, or manifest a late fall in output. While animal studies have usually shown the output to fall after ligation of a coronary, Agress has shown that coronary embolization may cause hypotension without arterial constriction.[9]

In summary, then, our information to date indicates that the persistent hypotension seen in some patients with acute myocardial infarction is usually due to a very low cardiac output. In some instances the hypotension is aggravated by failure of the peripheral vessels to constrict, and in very occasional instances, it is due entirely to peripheral dilation with a cardiac output which is normal but not elevated enough to sustain the pressure. While a dual mechanism is thus possible,[10] it is emphasized that the cardiac output is reduced in most instances of established shock.

As we all know, the output fall can be due to either an inadequate return flow of blood to the heart, or to deterioration of the heart's ability to pump an entirely adequate return flow. Blood volume changes are inconsistent or too minimal[11] to cause a seriously diminished return flow of blood to the heart. Furthermore, there is good evidence that the venous return is adequate: (1) Measurement of the central venous pressure by Freis, and by Lee[4,12] showed values above 20 mm. H_2O in 6 or 8 instances, and in Freis' 3 cases values of 40, 115 and 140 were found. (2) X-rays of the chest in patients with acute myocardial infarction have shown pulmonary congestion in the majority, indicating that the pressure in the pumonary veins and left atrium is increased. (3) In dogs, ligation of the anterior descending coronary artery causes an elevation of the left ventricular diastolic pressure. The finding of normal or elevated venous pressures, the roentgen evidence of pulmonary congestion, and the reported normal values for the central blood volume[4-6] all point to an adequate venous return. Since the venous return is adequate, it is evident that the reason for the impaired cardiac output is inadequacy of the heart as a pump and not inadequacy of the peripheral circulation.

The question of whether or not this is to be called heart failure is of more than semantic interest, since it will influence our approach to management. An inadequate cardiac output due to impaired capacity of the heart as a pump certainly constitutes failure of the heart, although in this situation the evidences of congestive failure are often not present and, instead, the striking clinical findings are those related to a reduced cardiac output. In many instances, overt left ventricular failure does occur at the same time. Selzer found the arm to tongue circulation time elevated in 42 or 45 patients with an acute myocardial infarction.

Why does the heart fail in the patient with shock after an acute myocardium infarction? (1) By definition, part of the myocardium is totally without blood supply and unable to contract. (2) Other parts, because of a blood pressure inadequate to drive blood through the unoccluded though probably narrowed coronary arteries, are not getting enough blood to contract adequately. (3) It is possible that when the arterial pressure is not too low, and when the arteries to the uninfarcted portion of the heart are too narrow, that the uninfarcted portion fails because it is too heavily loaded. (4) In addition, the portion of the myocardium which does not contract will bulge out with each systole, which means that the uninfarcted myocardium is doing extra work just to expand this non-contracting portion.

Management

The management of a given patient in shock from an infarct must obviously be thought out to fit the needs of that particular case. First, I would like to mention those methods which are well accepted and universally applicable. Then, we will consider those methods which are less well established and which may be used in selected cases. Finally, mention will be made of some of the more experimental approaches.

Standard Measures

Oxygen should always be given, preferably by mask when this is tolerated. There is little information on arterial oxygen saturation in this type of shock. Borden, Ebert and Wilson reported the results in 4 patients with definite roentgenographic evidence of pulmonary edema, and of 2 patients with the shock syndrome. The average per cent saturation was 80.8, as contrasted to a normal value of 97.5. The highest was only 92.4. It has already been mentioned that some pulmonary congestion is probably present. Oxygen will then raise the arterial saturation to normal, and in the instance of 100% oxygen, may raise the oxygen content beyond normal values by 2.2 ml. 100 ml. of blood. The oxygen tension or pressure, is raised much more. This means more oxygen delivery to the body, and more to the uninfarcted or marginally infarcted myocardium. In animals, it has been shown that the lowered oxygen tension at the margins of an experimental infarct is considerably raised by the administration of oxygen. Clinically, it seems to help, and is a logical procedure.

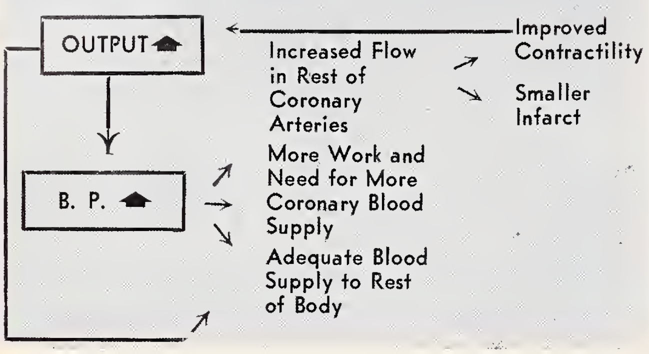
Pain should be controlled. If morphine is used, it should be given slowly intravenously in small doses, 8 or 10 mg. repeated if necessary. This is to ensure absorption.

Control of rapid arrhythmias is mandatory. The conversion of a ventricular tachycardia to sinus rhythm, or the slowing of a rapid fibrillation may by itself raise the blood pressure to normal or adequate levels.

Special Measures

These standard measures may be followed by enough improvement that the institution of more drastic procedures does not need to be considered. Direct measures to raise the output affect the pressure, and *vice versa,* as indicated in Table II. An increase in output will raise the pressure. A rise in pressure may increase the output by improving flow through the open portion of the coronary circulation to the rest of the myocardium thereby improving its contractility. On the other hand, this increases the work of

TABLE II


OUTPUT ⬆
B. P. ⬆
Increased Flow in Rest of Coronary Arteries
Improved Contractility
Smaller Infarct
More Work and Need for More Coronary Blood Supply
Adequate Blood Supply to Rest of Body

the heart and its need for blood. One hopes that the increase in coronary flow is greater than the increase in need for coronary flow.

It is well known from animal experiments and is apparent from clinical experience, that the body cannot survive if arterial pressure is too low for too long. It is also known that the normal dog heart does not withstand low arterial pressures for too long. There is for each patient some pressure level which is intolerable for any period, and which must therefore be corrected. The exact level will depend on the degree of vascular narrowing in vessels leading to vital areas, and on how much of the pressure drop is due to reduced flow. If there is dilatation of vessels leading to vital organs, these organs may receive enough blood at a systolic pressure of 70.

Pressor drugs, as indicated in Table II, may not only raise the pressure but may so improve coronary perfusion as to improve the strength of the heart. In addition, many of them, such as levarterenol and metaraminal directly strengthen the heart. Levarterenol has been shown to increase the myocardial oxygen tension in animals with infarction. On the other hand, pressor drugs increase return flow of blood to the heart, and in a heart which is unable to handle the return it is getting, this will be harmful unless outbalanced by the positive effects already mentioned. And, of course, the increased arterial pressure means more work for the heart.

The clinical results reported in numerous series so far have been highly variable. This is well shown in the report by Malach and Rosenberg in which they tabulate the results in 13 reported series treated with lavarterenol and find the mortality rate varying between 14 and 100%. This surely means that, as pointed out earlier, some workers included cases with milder degrees of shock who would have recovered anyway. For instance, in a series of 69 patients with shock not treated with pressor agents, Selzer found 21 cases which recovered spontaneously, usually in less than 15 hours. The obvious differences in patient selection make it hazardous to compare the mortality rate in a series of treated patients with that in another series of untreated cases. Furthermore, the average mortality rate in the treated patients is still high, so there are many cases of severe shock which cannot be salvaged by pressor therapy. We have dye curves on 2 such patients in severe shock, before and during levarterenol therapy. In both instances, the curve deteriorated after levarterenol. Adelson (unpublished work) has not been able to find any lessening of the mortality rate in treated versus untreated cases. While the criteria for shock were the same, the allocation to groups was not random, and hence this is not conclusive. Similarly, Gunton was unable to prove that levarterenol improved the prognosis. It is evident, therefore, that pressor therapy may save some patients, but that it does not affect a dramatic improvement in mortality rates.

Nonetheless, it is quite possible that some cases of shock are neither hopelessly severe, nor mild enough to recover on routine treatment, and

TABLE III

NOREPINEPHRINE TREATMENT OF SHOCK FROM MYOCARDIAL INFARCTION[1]

Series and Authors	No. of Cases	Mortality %
1. Miller and Baker	7	86
2. Kurland and Malach	14	71
3. Calenda et al.	13	85
4. Moyer et al.	14	58
5. Livesay and Chapman	6	83
6. Miller et al.	9	44
7. Smith and Guz	6	33
8. Gazes et al.	7	14
9. Griffith et al.[2]	30	—
10. Sampson and Zipser	30	47
11. Binder et al.	25	68
12. Littler and McKenrick	22	100
13. Malach and Rosenberg	17	100
Totals[3]	200	59

[1] Adapted from Malach, M. and Rosenberg, B. A. Am. J. Cardiol. 5: 487, 1960.

[2] No mortality data available

[3] Exclusive of series 9 for mortality

so may be saved by pressor therapy. Therefore, and because of the theoretical reasons previously cited, pressor therapy seems justified in cases with hypotension and the findings of shock, such as cloudy sensorium, weak or impalpable pulse, cold extremities, or signs of cerebral vascular insufficiency. In patients with warm skin, fair pulse volume, and no signs of shock, it is hard to be sure at what pressure level pressor therapy should be instituted. It is difficult to withhold treatment when the systolic pressure is below 80. In any event, the amount used should be no more than enough to raise the systolic pressure to around 100, unless there is evident cerebral vascular insufficiency or persistent signs of shock in a previously hypertensive patient. And of course when it is stopped, it should be carefully tapered off over a period of several hours. Both metaraminal and levarterenol seem to be effective, especially the latter. The incidence of arrhythmias does not seem to be increased, and in view of the need to increase the output, a drug which strengthens the myocardium seems preferable.

Transfusions. There are no good theoretical reasons for increasing the blood volume, and clinically there have been no evidences of benefit from transfusion.[7]

Digitalis. Since the reduced output in this form of shock is owing to failure of the uninfarcted myocardium to pump the blood returned to it, the use of digitalis is logical. Unfortunately, there are few reliable data to settle this point. The principle objection to it has been the danger of precipitating ventricular fibrillation. Fink and others gave 1.6 mg. of lanatoside C to 9 of their 15 cases of shock from infarction who had an elevated peripheral venous pressure. The blood pressure rose in each instance by an average of 52/10 mm.Hg. The average venous pressure fall was 3 cm. H^2O. Gorlin and Robin gave a cardiac glycoside intravenously to 4 patients with shock, 3 of whom also had pulmonary edema, and demonstrated a blood pressure rise in each case. There were 3 survivors. They also found that full doses seemed to precipitate arrhythmias in 2 cases. In patients who are not responding to other measures, and particularly in the presence of overt left ventricular failure, one should give a rapidly acting glycoside such as lanatoside C or ouabain. The first dose should be less than the full recommended one, and a smaller dose can be given later in the absence of a toxic or therapeutic effect. Monitoring by electrocardiograph is advisable.

Experimental Methods

Various groups have been studying partial cardiopulmonary bypass as a means of improving blood flow to the body and increasing coronary perfusion pressure. Simple venoarterial pumping, drawing blood from the superior vena cava and pumping it back to the femoral artery, is apparently not effective. A clinically useful method will probably be developed, particularly when means are found for safely pumping and oxygenating blood for long periods.

Likewise, treatment with hypothermia is still in a highly experimental stage. This is particularly so when its effects on the heart and peripheral circulation are only partly understood.

In my opinion, aminophylline is a useful drug in acute myocardial infarction with failure and without shock. Because of its vasodilator effects, and in the absence of positive evidence, it is probably contraindicated in shock. In 11 patients not in shock, it was found that aminophylline often raised the pressure, but usually lowered it first, sometimes to quite an extent (unpublished observations).

Conclusions and Summary

In summary, the shock which occurs from acute myocardial infarction is almost always due to failure of the heart to maintain an adequate cardiac output. In some instances, peripheral vasoconstriction is also inadequate, and in some instances hypotension may occur from vasodilation though the output is adequate.

While the mortality rate is still discouragingly high in patients with true shock, thoughtful and meticulous treatment may save patients who would otherwise succumb. Some patients improve promptly on rest, control of pain, and oxygen. Others, with true shock, or serious hypotension, should also be given a drug such as levarterenol, which is not only pressor, but improves cardiac contractility. High pressures should be avoided. Clinical improvement is often apparent, but the true value of this therapy is not known. Since there is usually an element of failure, a rapidly acting digitalis glycoside should be given cautiously when shock does not respond adequately or when there is obvious associated left ventricular failure. Mechanical support of the circulation and hypothermia are still in an experimental stage. This is a changing and exciting problem, because there are still more questions than answers.

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* Complete references can be obtained by writing the author.

THE DOCTOR AS PHILOSOPHER

William James

First of the great physician-philosophers in the United States was William James, who was born in New York City in 1842 and received his M.D. degree from Harvard Medical School in 1869. From 1872 to 1881 he taught anatomy and physiology at the school but, being more interested in philosophy than in the intricacies of the human body, he made a clean break with his medical interests in 1881 and became professor of philosophy at Harvard, which post he held until 1907.

Among his well-known books are: "The Will to Believe," "Varieties of Religious Experiences," "A Pluralistic Universe," and "The Meaning of Truth."

"The Will to Believe," published in 1897, deals with ethics and the philosophy of religion. The principal ideas advanced in this work were: whenever a genuine option cannot be settled on intellectual grounds, it is right and necessary to settle it according to our passional inclinations; the religious opinion concerning the belief in God is a genuine option which promises most to the person who has the passional need to take the world religiously.

In philosophy James taught that free will, and not determinism (the theory that decisions are casually determined), operates in life: a conclusion he arrived at because determinism fails to account for the **sense** of freedom we possess; the fact that we **seem** to have free will precludes determinism. Human choice and not divine fiat decides man's destiny.

His theory of "A Pluralistic Universe" rejects monism and offers instead a finite God representing only **one** of all the elemental forces in operation in the universe. The monists say: "The World is One," to which James retorts: "Why is 'One' more excellent than 'forty-three' or than 'two million and ten'?"

William James is known chiefly, however, for his exposition of pragmatism in "The Meaning of Truth." An idea is true if it works; the true is whatever is expedient in the way of thinking. A concept is true if it is such that, if acted upon, what one would receive perceptually is what one expects; in this sense, a true proposition satisfies an expectation. "The Truth is only the **expedient** in the way of our thinking:" "whatever proves itself to be good in the way of belief." Thus truth is conditional and relative rather than absolute. In fact, "Damn the absolute," says James.

Truth is one species of good and not, as is usually supposed, a category from good, and coordinates with it. The truth is the name of whatever proves itself to be good in the way of belief.

In psychology James attained a distinguished position, particularly in analytical psychology. Some of his theories, e.g., those of "fringes," the basis of emotions and the functions of the will, attracted a great deal of attention throughout the world.

While his theory of expediency might seem like hardheaded philistinism to some, James was basically a humanist. He opposed crass materialism and complacency; and he urged his fellow men to stop worshipping "the bitch goddess, Success" but rather to continue ever to "strain" toward greater goods and values.

William James' "Pluralistic Universe" is of great interest. He offers a finite God, "one helper in the midst of all the shapers of the great world's fate." The universe is not a closed nor ordered system but rather a battleground of cross currents and conflicting purposes, showing itself not as a universe but as a multiverse.

His speculation on human experience is a classic. He states: "I firmly disbelieve that our human experience is the highest form of experience extant in the universe. I believe rather that it is in relation to the whole of the universe, as our canine and feline pets are to the whole of human life. They inhabit our drawing rooms and libraries. They take part in scenes of whose significance they have no inkling. They are merely tangent to curves of history, the beginning and ends and forms which pass wholly beyond their ken. So are we tangent to the wider life of things."

His influence can be noted and evaluated in the political and humanitarian thinking of such prominent figures as Holmes and Brandeis, the two Roosevelts as presidents, Jane Adams, and others who advocated the use of practical, concrete means to better human ends.

James died in 1910. On his desk lay a note which read: "There is no conclusion. What is concluded that we might conclude in regard to it? There are no fortunes to be told and there is no advice to be given. Farewell."

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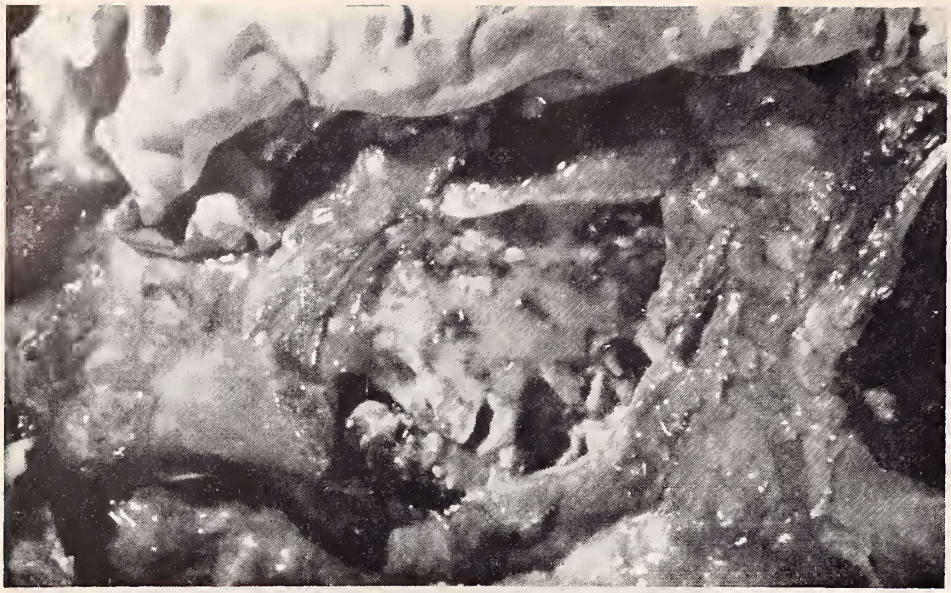

Fig. I Purulent pericarditis. Window cut in pericardial sac showing greatly thickened pericardium and heart covered with fibrinopurulent exudate.

Purulent

Seven cases of purulent pericarditis are discussed and the predisposing factors and etiologic agents are analyzed. The diagnosis of this condition is established by aspiration of material and the necessity for pericardiotomy is emphasized.

Galen, in the first century A.D., described purulent pericarditis in animals and speculated that it occurred in man. It was not until over 1,000 years later, however, that this was actually described.[1] During the last century, Laennec, Corvisart and Auerbrugger called attention to the characteristic physical signs in pericarditis.[2] In 1649, Riolan first proposed opening the pericardium for relief of pericardial effusion although he did not actually carry out the procedure. It was Romero in 1819 who apparently performed the first successful pericardiotomy.[2]

The true incidence of suppurative pericarditis is unknown. One of the first to report a series on this subject was Preble,[1] who in 1901 assembled 300 cases, mainly from the Cook County Hospital. Of these, 244 were acute illnesses. Pneumonia accounted for 79 (26 per cent) of them. This, Preble estimated, was one of every twenty cases of pneumonia. Rheumatic fever was associated with 65 (22 per cent), nephritis 26 (8.6 per cent), tuberculosis 24 (8 per cent) and finally, sepsis 11 (3.7 per cent). Preble did not mention which of these were suppurative. However, one would imagine most of those associated with acute pneumonia and sepsis (30

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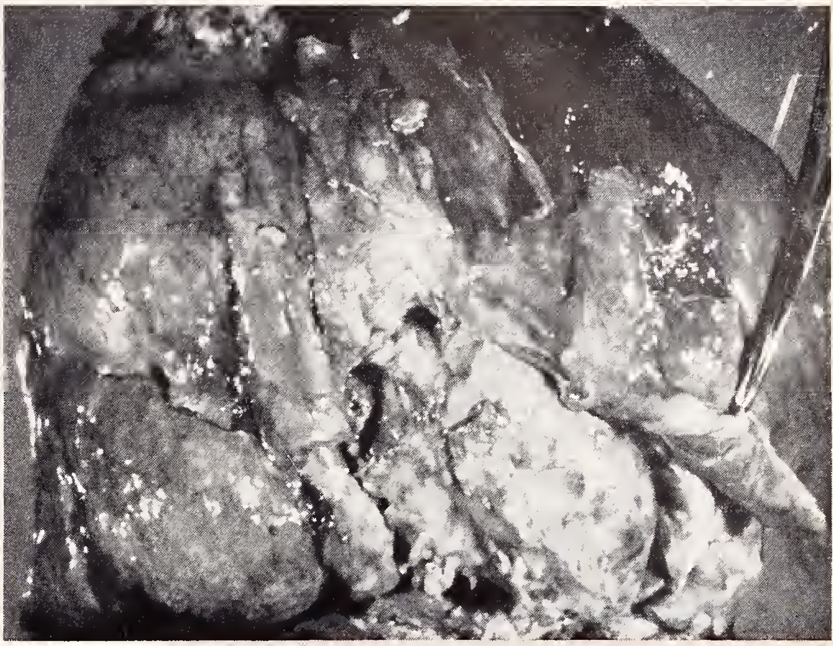

Fig. 2 Specimen of heart and lungs with pericardium removed. Note the thick shaggy exudate covering the epicardium.

Pericarditis

report of seven cases

per cent) would fall into this group.

Musser and Norris[4] in 1907 collected a series of 2,128 patients dying from pneumonia. At autopsy 12.6 per cent were found to have acute pericarditis. Approximately 40 per cent of the cases of pericarditis were suppurative. This figure agrees well with Preble's estimate.

Apparently some kinds of pneumonia are more commonly associated with pericarditis than others. Stone[5] in 1919 found pericarditis in 24 per cent of 300 soldiers dying from pneumonia during the influenza epidemic of 1918-19. Most of these occurred in patients with empyema. Seventy-five per cent of the cultures grew out streptococci.

In somewhat more recent times, Pyrah and Pain[6] reviewed 7,965 consecutive autopsies from Leeds General Infirmary during the ten year period 1921-31). They found a 2.7 per cent incidence of acute pericarditis, with males afflicted twice as frequently as females. They also noticed that the malady was more common during the first two decades of life, a fact observed by several other authors as well. Ninety-one (42 per cent) were purulent which gives an over-all incidence of about 1 per cent purulent pericarditis in their series.

As would be expected since the advent of antimicrobial agents, the frequency of purulent pericarditis has declined. Curiously enough, however, the over-all incidence of pericarditis has not. There were 13,353 autopsies from the Los Angeles County Hospital from 1940-46, analyzed by Griffith and Wallace[7]. The over-all incidence of pericarditis in this group was 5.4 per cent. Unfortunately the incidence of purulent pericarditis was not stated; however, the authors comment that it was considerably less frequent than in the past. It should be remembered that purulent pericarditis is now being treated more successfully, thereby lowering the postmortem incidence. Two series combining both autopsy and clinical diagnoses collected during the 1940's[8] showed about 20 per cent of acute pericarditis caused by pyogenic organisms.

Very little has been written about purulent pericarditis during the past 10 years and no attempt has been made to analyze the current etiologic factors or the importance of the disease. For this reason the following study is reported.

Material and Methods:

The records of the Minneapolis Veterans' Administration Hospital during the 11 year period (1950-60), which includes approximately 100,000 admissions, were analyzed for all cases of acute pericarditis diagnosed either by clinical or autopsy means. Among this number only seven were found where a definite diagnosis of purulent pericarditis could be made by culture and/or characteristic microscopic pathologic findings. Representative case summaries follow.

Case No. 1.

This 60 y.o. male was admitted to the MVAH for the last time on 8/14/52 complaining of anterior chest pain of 4-6 days duration.

This man had a herniated intervertebral disk and colitis with diarrhea since World War I. In 1948, he had a myocardial infarct, following which he was troubled by angina pectoris. In 1951 while in a V. A. Hospital he had another infarct. In 1952, he developed nocturnal angina, paroxysmal nocturnal dyspnea and orthopnea culminating in an attack of severe constant anterior chest pain. He was admitted to the MVAH five days later.

On admission he was found to be a pale white male complaining of anterior chest pain. B. P. 130/96, P 84. There were crepitant rales at the left base and the heart was enlarged to percussion. A grade I systolic murmur was heard at the apex and the heart tones were distant. The liver was palpable 3 finger-breadths below the right costal margin. There was no peripheral edema. The prostate was 1 plus enlarged.

Urinalysis on admission showed 15-20 WBC/hpf, hemoglobin was 13.8 gms. and white blood cell count 13,000 with 58 per cent polymorphonuclears. The white blood count rose to 17,000 on 8/15 and then gradually fell to 11,000 by 8/29. Serial electrocardiograms showed only the old posterior myocardial infarction.

In the hospital the patient initially did well on digitalis and a low salt diet plus narcotics during the first 24 hours. Two weeks after admission he again developed anterior chest pain requiring narcotics. Although never febrile, he was put on tetracycline 250 mg. four times daily. Over the next week he had several further attacks of anterior chest pain, became hypotensive and died on 9/6/52.

At autopsy the liver showed passive congestion and the lungs were involved with pulmonary edema. On opening the pericardial sac it contained 15-20cc of purulent material. Aerobacter, aerogenes and paracolon bacillus grew out on culture. The heart was grossly enlarged, the scar from an old infarct was present at the left apex, a softened necrotic area was present on the posterior wall, and a recent thrombus was found in the anterior descending branch of the left coronary artery. The bladder was thickened and trabeculated, although the kidneys were normal.

Comment: It was obvious at autopsy that this man died of multiple myocardial infarctions secondary to coronary atherosclerosis. An unexplained and apparently asymptomatic purulent pericarditis was also found. The reason for the patient receiving tetracycline for the last week of his life is not clear on review; however, it may have served to suppress the pericarditis to a subclinical level. The portal of entry of this infection is not proven, but the patient did have bladder neck obstruction with pyuria.

Case No. 2.

This 66 y.o. male was admitted to MVAH for the last time on 11/25/52 complaining of constipation, anorexia and weight loss.

He was first seen in 1928 with vague abdominal complaints. In 1931 he was demonstrated to have achlorhydria. For several months prior to the final admission the patient had intermittent tarry stools and had lost fifty pounds.

Physical examination disclosed a thin, chronically ill white male. B.P. 110/70, P. 85. The significant findings were limited to the abdomen where the liver was felt 1 1/2 cm. below the right costal margin. There were no other palpable masses.

Hemoglobin on admission was 9.9 gm. Sedimentation rate was 72 mm/hr. White Blood cell count was 9,300 with 64 per cent polymorphonucleus. An upper GI series demonstrated definite filling defects along the entire greater curvature of the stomach and a large mass in the antral area.

On 12/15/52 at operation a poorly differentiated carcinoma involving the entire stomach was found. A total gastrectomy was performed. Postoperatively the patient was afebrile for two days. His temperature then rose to 101 deg., blood culture at this time was sterile. On 12/20 he developed general abdominal rigidity and was re-explored. At operation copious amounts of serosanguinous turbid fluid was found within the peritoneum. The anastomoses appeared intact so 2 grams of streptomycin and 2 million units of penicillin were instilled and the abdomen closed. Culture of the peritoneal fluid grew out pseudomonas aeruginosa. The patient died on 12/21/52.

At autopsy the abdominal cavity contained 1,500 cc of foul smelling fluid and there was fat necrosis about the pancreas. The pleural cavities contained serosanguinous fluid and on opening the pericardium 30 cc of bloody cloudy material was found. A small communication between the peritoneum and inferior pericardium was present, and there was considerable inflammatory reaction over the inferior aspects of the heart and pericardial sac.

Comment: In this case inadvertent perforation of the diaphragm at time of gastrectomy, followed later by peritonitis, provided the unusual route of entry for the pericardial infection. As best can be ascertained it played no important part in the patient's demise.

Case No. 3:.

This 38 year old male entered the MVAH on 9/12/53 complaining of fever and chills of one weeks duration. The patient had been seen repeatedly since 1948 because of syringomyelia with moderate disability of the upper extremities. One week prior to admission he had a rather sudden chill and fever. During the week he had several further chills and was given penicillin on three occasions by his private physician. His only other symptom was a mild nonproductive cough. The patient stated that he had "heart trouble" as a child although subsequent examinations had never revealed any abnormality.

On examination the patient was a thin chronically ill white male with severe atrophy of the shoulder girdle and upper extremities. B.P. 100/70, P 100, Temp. 104 deg. The pharynx was injected and exudates were noted on the hard and soft palate. The lungs were hyperresonant but clear. The heart was not enlarged to percussion, the heart tones were strong, and there was a grade I soft systolic murmur along the left sternal border. Hemoglobin on admission was 13.7 gm., white blood count 14,150 with 87 per cent PMN's and a shift to the left. Blood urea nitrogen was 20.9 mg. per cent. Throat culture grew coagulase-positive hemolytic Staphylococcus, and Streptococcus viridans. Blood cultures on 9/12 and 9/17 contained coagulase positive Staphylococci. Chest x-ray was normal. Electrocardiogram on 9/21 showed T inversion in I, AVL, V4-5 with a QS pattern in V2-3 suggesting an anterior infarction of indeterminate age.

The patient was started on 300,000 units of Procaine Penicillin twice daily but continued to have an elevated temperature. On the sixth hospital day he lost central vision in his left eye and fundiscopic examination showed papilledema and several small white centerol hemorrhages suggestive of septic emboli. On the eighth hospital day streptomycin 0.5 gm. 4 times daily was added to penicillin. He continued to have a septic course so parenteral oxytetracycline 1 gm/day was begun. On the twelfth hospital day cardiac tamponade was first noted and 600 cc of sterile fluid was removed from the pericardial sac by needle aspiration. Two days later he had to be re-aspirated and 150 cc of seropurulent fluid containing coagulase-positive hemolytic Staphylocci was obtained. The patient developed left pleural effusion and right sided pneumonia. On the twentieth hospital day 1,100 cc of purulent fluid was obtained by paracardiocentesis and the patient then had a pericardiotomy. At operation the pericardium was thick and the epicardial surfaces were shaggy. A considerable amount of thin pus was aspirated which later grew out the same hemolytic staphylococcus. Immediately following operation the patient looked much better and was afebrile within ten days.

He was seen in followup six months later and at that time was having no shortness of breath. Cardiac fluoroscopy showed good pulsations and no murmur was heard on auscultation.

Comment: The initial cause of this man's septicemia was never definitely established although he did have a pharyngitis. Numerous antibiotics plus needle aspiration were not effective and only when the pericardium was surgically drained did the patient improve.

Case No. 4.

This 41 y.o. male was admitted to the MVAH on 1/11/61 complaining of shortness of breath and chest pain of three days duration.

The patient was apparently well until December 1960 when he developed "burning" anterior chest pain and weakness. After symptomatic therapy he continued to feel weak and have a mild non-productive cough. He lost fifteen pounds and was unable to work. He became progressively more dyspneic.

On admission he was a pale dyspneic white, male B.P. 104/70 with 20 mm. of respiratory paradox, P. 120; Temp. 99.4 deg. The neck veins were markedly distended. There was dullness to percussion at both lung bases with fine moist rales in the lower one half of both lung fields. The left border of cardiac dullness extended 2 cm. beyond the midclavicular line and the apical impulse was not palpable. The heart sounds were strong. The liver was palpable 10 cm. below the right costal margin but there was no peripheral edema.

Hemoglobin was 10 gm., white blood cell count was 38,000 with 92 percent PMN's, venous pressure was 23 cm. H_2O and the circulation time was 20 seconds, arm to tongue. Chest x-ray showed extensive pleural thickening at the left apex, and diffuse infiltration throughout the left lung. The left heart border could not be defined but appeared to be involved in extensive pleural thickening. Electrocardiogram showed symmetrical T-wave inversion in leads I, AVL, and V_{3-6}, compatible with pericarditis.

In the hospital the patient rapidly became weaker and more dyspneic. Approximately 18 hours after admission pericardiocentesis was attempted because of obvious cardiac tamponade. Apical and subxyphoid approaches were tried but only a very small amount of purulent material could be obtained. It was decided to attempt further aspiration under fluoroscopy but before this could be done the patient expired. Culture of the pus grew out Diplococcus pneumoniae.

At autopsy both pleural cavities contained adhesions. There was an encapsulated ampyema pocket at the left apex and another at the left base, each containing about 20 cc of sterile pus. The pericardium was greatly thickened and adherent to the ventricles (Figure 1). Over the right side of the heart there was a loculated area containing approximately 250 cc of pus. Another somewhat smaller pocket was found posteriorly. This material grew out Diplococcus pneumoniae. Both the pericardium and epicardium were covered with thick fibrinous material (Figure 2).

Comment: This is a classical case of fatal suppurative pericarditis in a relatively young male following pneumonia and left empyema. A brief course of penicillin apparently suppressed the infection sufficiently to produce a subacute infection which extended over a one month period.

Analysis of Data

Of the seven cases of pericarditis reported here only two were diagnosed antemortem. This obtained because of the severity of the primary disease (Table I).

Table I — Primary Disease	
Myocardial infarction	2
Malignant tumors	2
Pneumonia with empyema	1
Syringomyelia	1
Emphysmea (severe)	1

Sites of infection other than the pericardium were present in 6 (Table II), although they were actually obvious sources of the infection in only 2 instances.

Table II — Other Sites of Infection	
Urinary tract	3
Pneumonia and empyema	1
Peritonitis	1
Septicemia	1
Bacterial pharyngitis	1
Wound infection	1
None found	1
	9*

Although the series is far too small to generalize the large number of gram-negative infections causing the pericarditis to be noted (Table III). This may well be a reflection of the increasing number of gram-negative septicemias being seen in chonically debilitated people on antibiotics.

Table III — Organisms	
Paracolon bacillus	2
Pseudomonas sp.	2
Aerobacter aerogenes	1
Staphylococcus aureus	1
Diplococcus pneumoniae	1
Not known	1

Discussion

Pneumococci, Staphylococci, and Streptococci have been the common causes of septic pericarditis although the coliform bacteria, Hemophilus influenza,[1] Hemophilus pertussis,[9] and Meningogocci,[9] are occasionally found. Rare causes include amebiasis,[11] tularemia actinomysosis[9] and filariasis. Of 265 cases of purulent pericarditis reported in the literature up to 1941 which were treated with pericardiotomy, 159 had the causative organism determined.

The relative incidence in this series was:

Pneumococci	65	43%
Staphylococci	45	29%
Streptococci	40	26%
Colon bacilli	2	1%
H. pertussis	1	0.5%
H. influenzae	1	0.5%

Organisms enter the pericardium in one of four ways. The most common is direct extension, as with pneumococcal pneumonia. The usual sequence is pneumonia leading to empyema with extension into the pericardial sac. Pericarditis is more likely to occur with left rather than right sided empyema.

Hematogenous spread to the pericardium is also a frequent method of infection. In recent years with the great reduction in empyema this may actually be a more important portal of entry. It certainly was so in our small series. In the older literature the primary site was frequently osteomyelitis.

An interesting observation regarding hematogenous spread to the pericardium was made by Hahn et al. In attempting to produce pulmonary abscesses in dogs these workers injected septic emboli into the right posterior bronchial artery. Curiously enough, instead of producing pulmonary abscesses, they produced purulent pericarditis. Upon checking the distribution of this artery they found that, in dogs it anastomoses with the right coronary artery and also sends branches to the pericardium and atrial walls. The situation in man is not clearly defined although the standard anatomy texts do not mention such branches of the right posterior bronchial artery.

Traumatic introduction of bacteria into the pericardial sac through perforating injury is a a well-known, although uncommon route. It is said[5] that Galen removed the sternum and anterior pericardial wall of a soldier who had sustained a chest injury and subsequently developed purulent pericarditis. The patient was apparently saved by this procedure.

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*The total is greater than seven since some patients had more than one site of infection.

Extension or perforation through the diaphragm is the least frequent method of infecting the pericardium although it did occur in one of our patients. Usually there is a subdiaphragmatic abscess or abscess in the left lobe of the liver which perforates spontaneously into the pericardium. The latter is, in fact, the method by which amoeba gain access. Forty-seven such cases have been reported.[11]

Pathology

The pericardium reacts to bacterial infection first by depositing fibrin and leukocytes on its surface, the so-called dry fibrinous pericarditis. It is in this stage that pericardial friction rubs are most commonly heard. If the infection is overwhelming the patient may die in this stage without free pus ever being formed. As time goes on serum, blood and leukocytes are exuded into the sac. The relative amounts of each determine the gross character of the pericarditis, serofibrinous, seropurulent, serosanguinous etc. The pericardial sac normally contains 10-15 cc of fluid. Amounts less than 150 cc defy detection by any means and rarely do effusions under 400 cc cause changes in the cardiac silhouette.

From the seropurulent stage the effusion becomes purulent and more fibrin is laid down and slowly organizes. If the patient survives without treatment he is finally left with adherent constrictive pericarditis.

Clinical Features

The signs and symptoms suggestive of pericarditis depend, to a considerable degree on the extent of the inflammatory reaction, the primary disease process, and whether or not cardiac tamponade is present.

The nonspecific findings present in any severe infection, fever, chills, malaise and anorexia are usually found. Cough, orthopnea and dyspnea occur commonly. The cause of the latter is not always clear. It can be secondary to heart failure with pulmonary congestion, compression of the left lung by a large pericardial effusion, or interference with breathing by pleuritic pain. It has been suggested that displacement of the bronchial tree may be important in the production of dyspnea.

The pain of pericarditis has variously been described as sharp, dull, gripping, aching, constricting and pressing.[8] It is usually substernal in location with radiation to the neck, left shoulder and arm, epigastrium, or trapezius ridge. The pain is characteristically aggravated by deep breathing, rotation of the torso, and swallowing.

Experimentally it has been found that the parietal and visceral pericardial surfaces are insensitive to pain, and the outer surface is insensitive above the fifth or sixth intercostal space. The phrenic nerve supplies branches to the lower external surface and stimulation here produces pain in the trapezius ridge. From this it is concluded that the substernal pleuritic pain is caused by involvement of adjacent structures, i.e. mediastinum, diaphragm and costal pleura rather than inflammation of the pericardium.

The physical signs in pericarditis are somewhat more specific when present. A pericardial friction rub is the most helpful sign although frequently it is not heard. It probably occurs at least briefly in all cases, but unfortunately, with the accumulation of fluid it may disappear. Other signs include palpitation of the apical impulse within the border of cardiac dullness, an obtuse cardiohepatic angle on percussion (Rotch's sign), and an area of dullness with bronchial breath sounds at the left inner lung base (Ewart's sign). The heart sounds need not be distant, for in many cases the heart lies against the anterior wall of the pericardium, and at times there may be adhesions in the area. Most striking of the physical signs are those which occur with cardiac tamponade. They include diminished systolic blood pressure with paradoxical pulse, engorgement of the neck veins and liver, rapid weak pulse, and at times cyanosis.

Diagnosis

The diagnosis of purulent pericarditis is made by aspiration. Although it may be suspected from other findings the only way to differentiate it from other forms of pericarditis is by examination of the fluid. The pericardial tap is also helpful in providing material for bacteriological studies. It relieves tamponade if present, and provides a route for instillation of therapeutic agents.

The electrocardiogram and roentgenography are important diagnostic aids in pericarditis. The electrocardiogram characteristically shows ST elevation in the leads reflecting the epicardial surface (I, II, AVL, V_{3-6}) early in the disease. The ST segment is concave upward rather than convex upward, as in myocardial infarction. After a variable period of time the ST segments return to the isoelectric line and the T waves become symmetrically inverted.

X-ray findings of diagnostic importance include striking enlargement of the cardiac silhouette over a short period of time, especially if the lung fields are clear. Poor cardiac pulsation at fluoroscopy with normal pulsation of the aortic knob is also suggestive. Change in cardiac contour on assuming the Trendelenburg position is not helpful since it also occurs with a large failing heart.

Finally it should be mentioned that suppurative pericarditis is almost always secondary to infection elsewhere in the body, and not uncommonly is obscured by the antecedent or associated disease. It should therefore be thought of in pneumonia, empyema, osteomyelitis, endocarditis, and other forms of septicemia if any of the above signs or symptoms are found. In Osler's words "no serious disease is so frequently overlooked."

Treatment

Prior to 1920 the treatment of purulent pericarditis was usually expectant with rather disastrous results. The mortality was all near 100 per cent. Hillsman in 1844 performed a successful pericardiostomy for pyopericardium. However, it remained for Shipley and Winslow in 1927 to popularize the procedure. They demonstrated that the operation could readily be performed under local anesthesia at little risk to the patient. They further showed that the mortality rate could thereby be decreased from 100 per cent to 50 per cent.

The situation changed little from that time until the advent of antibiotics. With the use of antibiotics many early cases of pericarditis are aborted. If pericarditis is moderately advanced with effusion present, systemic antibiotics are usually not sufficient although cures certainly have been reported. The therapeutic problem is analogous to that of empyema. Antibiotics do not penetrate the pus in sufficient concentration to be bactericidal, and without drainage constrictive pericarditis may result from the organizing exudates. There is also the danger of tamponade. Recent authors have advised needle aspiration of the free pus followed by local instillation of the appropriate antibiotics, but the problem of loculade pockets of pus remains. Some authors feel that if there is evidence of effusion remaining after aspiration a pericardiotomy should be performed. Others would add local streptokinase and streptodornase to the antibiotic instillation with the later aspiration of the digested debris. Although there is no question that streptokinase-streptodornase is effective in proteolysis, their side effects are serious. The latter is especially pertinent in pericarditis since the irritation causes a rapid outpouring of fresh exudate which could readily cause acute tamponade. Pericardiotomy is a relatively simple operation with little associated morbidity and proven value. It can be performed under local anesthesia. One can manually break up adhesions and free loculated areas of pus as well as establish satisfactory permanent drainage. Until clinical experience proves the worth of proteolytic enzymes in this condition, operation should be resorted to in any case not readily responding to aspiration and antibiotic instillation.

Prognosis

It was originally feared that purulent pericarditis, whether drained or not would lead to the patient's demise. If he did not succumb to the acute infection, it was felt that constrictive pericarditis would ensue. This, fortunately has not proven true. Shipley followed 39 cases one year or more after operation and of these only two developed constrictive pericarditis. Undoubtedly if the patient can be treated before significant fibrin is laid down, the chances of this complication will be less.

Summary

Seven cases of purulent pericarditis have been presented with analysis of the predisposing factors and etiologic agents. The general scope of the problem and aids in diagnosis have been discussed. Various forms of therapy are reviewed and commented upon.

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DANGERS OF JUGULAR COMPRESSION

(Queckenstedt Test)

The inherent dangers of lumbar puncture in patients with choked discs and increased intracranial pressure are well recognized. Marked increase in intracranial pressure can be present without evidence of choked discs. This situation may exist with acute cranial injuries and cerebral edema, chronic head injuries with subdural hematomas, and in the early stages of development of intracranial tumors. The only indication of the degree of intracranial tension may be the state of consciousness. Progressive drowsiness should be a warning that lumbar puncture may precipitate a dramatic and rapid progression of signs and symptoms of increasing intracranial pressure.

Sudden death following lumbar puncture has been attributed to herniation of the brain stem through the foramen magnum. This undoubtedly results from the continued leakage of cerebrospinal fluid into the epidural space through the puncture hole made in the dura. The escape of fluid occurs after nearly every lumbar puncture but is exaggerated in the presence of increased intracranial pressure. The continued leakage of fluid allows the brain stem to become wedged tighter and tighter in the foramen magnum or incisura tentorium.

One can accelerate explosively and magnanimously this same disastrous effect by doing jugular compression (Queckenstedt test) at the time of the lumbar puncture.

In the diagnosis of any acute cerebral lesion lumbar puncture has little value except to determine the presence of infection or subarachnoid hemorrhage. The degree of pressure recorded by the spinal manometer is often not an accurate measure of the intracranial pressure when a space-occupying cerebral lesion is present.

The Queckenstedt test is used primarily to determine whether a block exists in the spinal subarachnoid space. Despite the relative worthlessness of jugular compression as a diagnostic aid in intracranial disease, it is almost a routine procedure for many physicians.

Some of the deaths attributed to lumbar puncture could have been prevented if the jugular veins had not been compressed as a routine part of the procedure.

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Irregular fetal heart tones are not a consistent sign of fetal distress. Accurate assessment of their significance during labor will be augmented if they are searched for during the last trimester of each pregnancy.

Irregular Fetal Heart Prior to Labor

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Irregular fetal heart tones have been considered a sign of fetal distress since the studies of von Winckel in 1893.[1] Described below are three observations of irregular antenatal fetal heart tones without abnormality in the newborn.

Case 1

The mother was a 34-year old and para 3-0-1-3. Her pregnancy was uncomplicated until the 37th week of gestation. At this time her blood pressure was 110/80, urine albumin was negative, and the fetus, estimated fetal weight 2600 grams was in an LOA presentation with the vertex floating. The fetal heart tones were markedly irregular. A fetal phonocardiogram obtained with an Electrovac phonocardioscope (R) showed the fetal heart rate varying from 45 to 60 second periods with a rate of 170 to 180 beats per minute to 120 to 160 second periods with a rate 60 to 72 beats per minute. Attempts to obtain a fetal EKG were unsuccessful. An abdominal amniocentesis showed normal amniotic fluid with a coproporphyrin value of 2.3μ grams per cent. The irregular fetal heart rate persisted during alterations in maternal position and external manipulation of the fetal head.

The patient was seen daily in the out-patient clinic for the next five days. At each visit the fetal heart tones remained persistently irregular and were not affected by sedation (seconal 75 mgm. I.V.), anti-fibrillatory drug (quindine 0.2 grams q.i.d.), atropine, grs. 1/150, restriction of stimulants or changes in maternal position. A maternal arterial blood oxygen showed 96 percent saturation.

At the 39th week of gestation prolonged recording of the fetal heart showed no irregularity.

The patient was admitted in late labor on the 41st week of gestation. During labor a total of 15 minutes of fetal heart tones were recorded which showed only the normal 'V' type variation as described by Hon.[2]

A 3450 gram male infant was delivered spontaneously using, at the patient's request, no anesthesia or analgesia. The one minute Apgar rating was 9 and the infant appeared grossly normal. The laboratory work from the cord blood showed normal hemoglobin, percentage of fetal hemoglobin and lactic acid. An immediate chest X-ray and EKG were within normal limits. Gross and microscopic inspection of the placenta and umbilical cord showed no significant abnormalities.

The infant and mother were discharged home on the fourth post-partum day. At the six-weeks newborn examination the infant appeared normal.

Case II.

The patient was a 23-year old para 0-0-0-0. Grossly irregular fetal heart tones were heard at the twenty-first week of gestation. These sounds were characterized by a premature beat occurring every six to eight beats of the heart. This regular irregularity continued throughout pregnancy. Labor began in the 43rd week of gestation. The same irregularity of the fetal heart tones continued throughout labor and the patient spontaneously delivered a normal 3800 gram infant. The one minute Apgar was 8, the cord hemoglobin, lactic acid, potassium and calcium were within normal limits. The percentage of fetal hemoglobin was decreased. The EKG at 36 hours of age showed an atrial arrhythmia. The cardiac irregularity disappeared during the second week of life. At the time of the six-weeks examination, the infant showed no abnormalities.

Case III.

The patient was a 24-year old para 0-0-0-0. An irregular fetal heart rate was observed at the 35th week of gestation. The patient displayed the classical supine hypotensive syndrome, grade II (Holmes)[3] and the irregularity of the fetal heart rate was clearly associated with the maternal prone position. This irregularity was noted through the 38th week of gestation. Labor began during the 39th week of gestation. The fetal heart rate showed only the physiologic alteration associated with uterine contractions. A 3300 gram male infant was delivered by low forceps. At the time of the four-weeks pediatric examination, the infant appeared normal.

Discussion

In the sheep fetus bradycardia followed by tachycardia is an accurate sign of fetal distress. The bradycardia appears to be a vagal reflex as it is abolished by atropine. The tachycardia probably results from fetal adrenalin, secondary to the fetal distress.[4]

In studying the fetal heart rates of 53 patients not in labor, Smith and Hervert found frequent irregularities and rates varying from 93 to 160. They concluded that irregular antenatal fetal heart rates were of little or no clinical significance.[5] Hyman in 1930 grouped antenatal irregular fetal heart rates into three groups: the extra systoles, the dropped beats and the bradycardia.[8] Redman, 1958, essentially using Hyman's classification when discussing nine of his own cases and reviewing the literature, concluded that the prognosis with extra systoles, i.e., a 4:3 dropped beat is reasonably good but that with a regular bradycardia about half have a poor prognosis.[7]

In case I, the tachycardia was of borderline significance but the bradycardia was far below the accepted low normal value. The bradycardia in this case was not affected by atropine suggesting that this was not a vagal reflex. When the marked irregular fetal heart tones were first noted a diagnosis of fetal distress was considered. Fetal distress, however, seemed unlikely when normal amniotic fluid was obtained.

Case II simply reinforces the conclusion of Hyman, Smith and Hervert of the benign nature of dropped beats.

Case III is of interest because of the apparent association of the irregular fetal heart tones and the supine hypotensive syndrome. The probable relationship of abruptio placenta to the supine hypotensive syndrome suggests that signs of fetal distress should be looked for in patients displaying the supine hypotensive syndrome.

The available literature and our own experience indicate that irregular fetal heart tones occur frequently prior to labor. Pathologic causes, except the rare cardiac septal defect, are not known. It would seem reasonable that the same apparently benign irregularities should also occur during labor. If this is true, it may help explain Walker's observation[8] that the character of the fetal heart rate during labor and the condition of the infant at birth are often poorly correlated.

Summary

In three pregnancies with irregular fetal heart rate prior to labor the newborn infants were normal. The character of the fetal heart rate is not a sure sign of fetal distress.

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GUILLAIN-BARRE SYNDROME

This syndrome was first described in 1916 as a neuroradiculitis with hyperalbuminosis of the cerebro spinal fluid without cellular reaction. It is probably an eponym for infectious neuronitis presenting temporary paralysis. It is characterized by ascending flaccid paralysis resembling poliomyelitis. The pain and tenderness, however, are greater than poliomyelitis. Currently this syndrome is considered to be an afebrile type of polyneuritis which may involve not only the cranial and peripheral motor nerves but the spinal cord as well. Either children or adults may be affected.

The clinical features may include bilateral facial paralysis, symmetric paresthesia, and at times involvement of the ocular nerves. The degree of paralysis varies.

Tendon reflexes are entirely absent. The diagnosis is confirmed by the presence of an afebrile, peripheral neuropathy with absent deep reflexes and an albuminocytologic dissociation, characterized by an increase in the protein in the cerebrospinal fluid without a corresponding increase in the cells.

Treatment is symptomatic and supportive and the prognosis is usually good.

> A country doctor needs more brains to do his work passively than the fifty greatest industrialists in the world require.
>
> Walter B. Pitkin

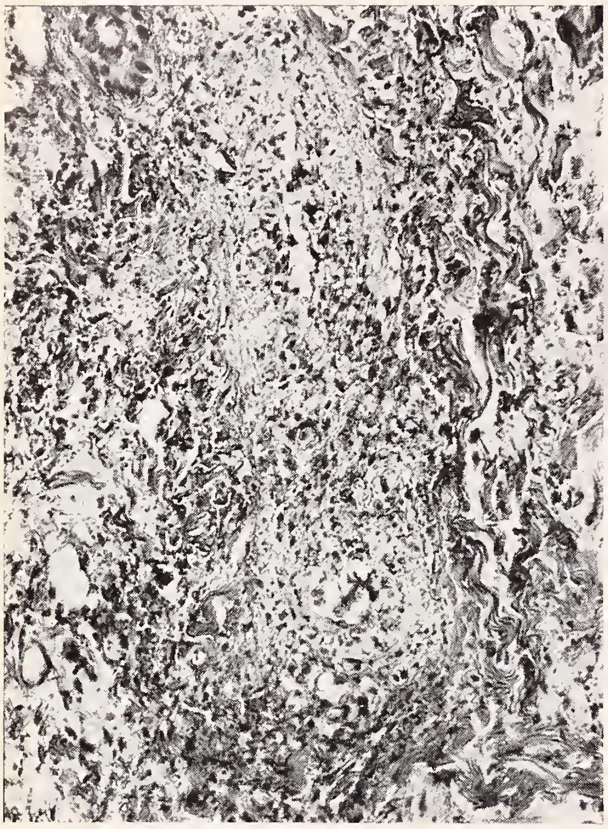

Fig. 1. Arteriole of upper part of corium in oblique section. Pronounced thickening of vessel wall is evident with homogeneous and fibrillar changes of periadventitial tissue. Area is infiltrated with erythrocytes and intact and fragmented polymorphonuclear leukocytes (hematoxylin and eosin; x275).

Allergic

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Allergic angiitis is a pathologic diagnosis referring to a special type of inflammation of small blood vessels and to a distinct group of hemorrhagic syndromes which are associated with this pathology. In dermatology we confine its application to a microscopic picture composed of inflammation and necrosis of the wall of the vessel, leukocytic response and leukocyte destruction (leukocytoclasia), necrosis and hyalinization of the perivascular connective tissue, and microscopic hemorrhage. This is usually confined to the upper portion of the dermis, although occasional involvement of the entire dermis and even portions of the upper subcutis are seen. Figure 1 represents an example of this type of pathologic change.

The use of the term "allergic" implies an antigen-antibody mechanism. This has not been demonstrated in this form of vasculitis. Although the use of "allergic" as an adjective may be deplored, it is difficult to see what would replace it in common parlance. This condition is related to a hypersensitivity response by the acute onset, relation to toxic chemicals, eosinophilia, and by the similarity of the pathology[1] to the pathology of the Arthus phenomena and the Sanarelli-

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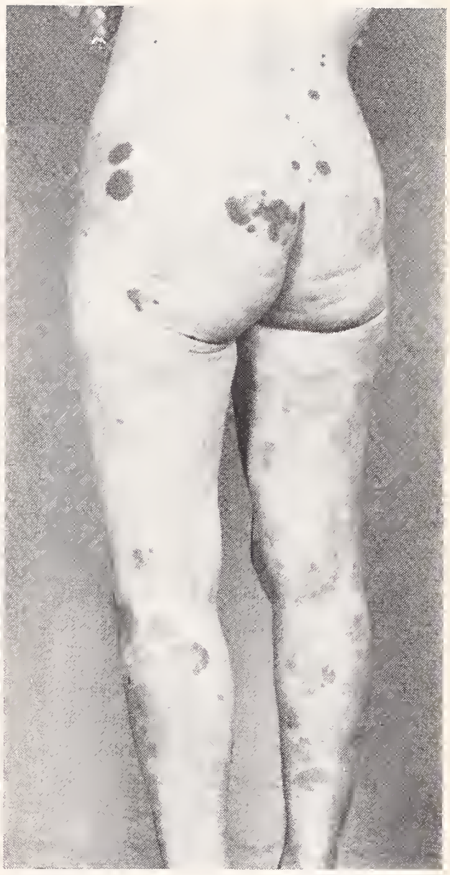
Fig. 2. Posterior view of patient presented. Purpuric papules and plaques are evident, as are pigmented residua of older involvement.



Angiitis

Schwartzman reactions as has been repeatedly emphasized.[2,3]

Historical Considerations

"Allergic angiitis" is in essence a hybrid term. Its use derives from dissatisfaction with the classification of periarteritis nodosa and the recognition that experimental anaphylactoid purpura and many clinical forms of hemorrhage have a common pathology. Miescher,[4] in 1946, pointed out that many cases previously classified as cutaneous periarteritis nodosa were in fact more closely related to anaphylactoid purpura. Ruiter[5,6] has developed and refined this concept in numerous articles, particularly in reference to the syndromes of anaphylactoid purpura, purpura rheumatica, and many of the hemorrhagic drug eruptions. The nodular dermal allergids of Gougerot, divided into mono, bi, tri, tetra, and pentasymptom complexes, represent a clinical and morphologic approach to the same problem.[7] Zeek,[8] who was primarily concerned with systemic vasculitis, has described what she prefers to call "hypersensitivity" angiitis afflicting the small vessels. This is seen particularly in the kidneys, lungs, pancreas, and gastrointestinal tract. Vessels larger than capillary, arteriole, or venule were rarely, if ever, involved. Szymanski[9] and one of us (R.K.W.)[10] have pointed out the basic identity of this process with allergic angiitis and have noted that such entities as erythema elevatum diutinum, allergic granulomatosis of Strauss and associates,[11] and Wegener's granulomatosis and its localized cousin, idiopathic lethal mid-line granuloma of the facial tissues, are marked by the same basic pathologic process.

Classification of Cutaneous Leukocytoclastic Angiitis

1. Acute—Schoenlein-Henoch purpura (anaphylactoid purpura)
   Hypersensitivity angiitis
   Granulomatous vasculitis (Wegener's granulomatosis, "allergic" granulomatosis)
2. Chronic—Papulopetechial form
   Plaque form
   Infarctive, purpuric, bullous form

The course of the acute cases and those with infarctive purpuric and bullous lesions is associated with evidence of visceral vascular inflammation and hemorrhage. The patient usually has an acute onset with malaise, headache, and a febrile response. Hemorrhage into the gastrointestinal system, genitourinary tract, nasal and respiratory mucous membranes, the eye, and, more rarely, the central nervous system may occur. Neuropathy as polyneuritis, mononeuritis multiplex, or peripheral neuritis is not infrequent and may be of ominous significance. Arthralgia and joint swelling are to be expected. The cutaneous findings are basically a symmetric purpuric reaction with evidence of associated inflammation. Involvement of the skin may precede, occur concurrently with, or follow the systemic manifestations.

The papulopetechial and chronic plaque forms of vasculitis have a more benign course, and at times neuritis, renal hemorrhage, epistaxis, or arthralgia or other systemic changes may be associated. Although these forms are usually short-lived, the problem may last for many years with a few lesions developing continuously. There is a pronounced predilection for the lower extremities.

Cases with mixed features are common and there is always a difficulty in attempting to confine cases to the narrow limits of preconceived syndromes. The following case is an example of the type of problem encountered.

Report of Case

The patient is a 28-year-old married woman who was seen at the Mayo Clinic in September 1947. In 1942 she had experienced migratory arthritis with redness, heat, and swelling involving the ankles, knees, hips, wrists, elbows and shoulders. Joints were involved 3 to 6 days at a time, and there was apparently no residual change following resolution of the inflammation. In the spring of 1943 urticarial lesions developed which shortly became papulopetechial. With the passage of time plaque-like areas formed; they had a tendency to clear centrally and progress at the periphery. New crops of lesions appeared at irregular intervals, and the flares were accompanied by episodes of "asthma," joint pain and swelling, confusion, and elevation of temperature to 102 to 103°F.

On examination, numerous lesions on the feet, legs, thighs, buttocks, lower back, hands, palms, and palate were evident. They were symmetrically distributed and consisted of purpuric urticarial papules and annular plaques. Considerable residual pigmentation was present. No ulceration or bulla formation was noted. The lesions are demonstrated in figure 2.

In 1945 the patient had become extremely nervous and lost considerable weight. The basal metabolic rate was said to have been +63 per cent at that time. A thyroidectomy was done elsewhere, and following this some temporary improvement in the condition of the skin occurred. A number of "infected" teeth had previously been extracted in an attempt to correct the condition. Again this was followed by only temporary improvement. Dental examination here in 1947 revealed no evidence of dental infection.

The patient had a strong history of family allergy. The father and brother suffered from hay fever, asthma, and episodes of urticaria and angioedema. The patient had suffered from seasonal hay fever for many years. Asthma was of recent onset — since the appearance of the joint and skin problem. She gave a history of "sensitivity" to many foods and drugs. Vitamin P, morphine, epinephrine, aspirin, and "sleeping capsules" had all produced symptoms such as dizziness, tinnitus, shortness of breath, and nausea and vomiting. Hives and angioedema were said to have been produced on occasion by such foods as pork, fish, potatoes, tomatoes, dill pickles, and fruits of all kinds. Episodes of angioedema had followed exposure to cold. Menstruation, worry, trauma, and stasis were all factors which had been associated by the patient with her problem.

Sulfonamides, salicylates, antihistamines, and vitamins P and K had been used previously for the skin and joint problems. In addition, she had taken digitalis, thiouracil, and potassium iodide for the thyroid problem.

Laboratory examination was not remarkable. Hemoglobin measured 11.4 gm. per 100 ml. of blood. Leukocytes numbered 5800 per cubic millimeter of blood, with the differential count showing a normal distribution. There were 160,000 platelets per cubic millimeter of blood. The urine was clear. The concentration of urea was 22 mg. per 100 ml. of blood. The erythrocyte sedimentation rate was 16 mm. in 1 hour (Westergren). Cryoglobulin was not present, and a flocculation test for syphilis was negative. The Rumpel-Leede test was positive.

A roentgenogram of the thorax was negative.

Biopsy showed typical changes of the small superficial blood vessels compatible with allergic angiitis.

The patient was started on a diet of rutin with apparently good results at first, but a progress report in 1955 from elsewhere indicated that her condition had persisted and was disabling.

Comment.—The thread of hypersensitivity and the aggravation by physical factors as manifest here are common findings in patients with allergic angiitis. Asthma as a part of the problem relates this case closely to "allergic" granulomatosis[11] and points out the basic interrelation of all of these cases.

Etiology

The role of drugs, particularly iodides and antibiotics, in the aggravation of this type of case is becoming increasingly apparent. Known cases of angiitis are commonly related to bacterial infection, drugs, or chemicals.[8, 12] Sensitivity to bacteria, such as streptococci, has been emphasized, but the exact relations and nature of this sensitivity remain to be precisely defined.[5, 13, 14] Cases have been associated with the administration of bacterial antigens.[12] Antibiotics, anticonvulsants, and sedatives are medicaments frequently related. Exposure to the chemicals in weed killers and insecticides have seemed important in some cases.

Laboratory Abnormalities

In the case presented the Rumpel-Leede test was positive. This is by no means universally true. Results of laboratory tests of the clotting mechanism are usually normal, although some refined approaches have suggested the need for more complete and detailed study of this problem.[15,16] The erythrocyte sedimentation rate in the case presented was normal, whereas moderate to pronounced elevation would have been more usual. The white blood count may be normal or moderately elevated. The eosinophil count may be elevated, and occasionally it reaches rather remarkable levels. Evidence of hemorrhage in the urine and feces and into various tissues should be sought. The blood proteins should be studied. Occasional elevation of levels of gamma globulin occurs, and positive tests for rheumatoid factor or L.E. clot may be found. The skin biopsy is the diagnostic procedure.

Treatment

Chronic angiitis of the skin requires little treatment. Rest and elevation of the legs are important, and administration of antihistamine is useful. Application of Ace bandages may aggravate the problem. The basic sensitivity of these patients should be recognized, and investigation into possible allergic factors should be vigorous. Other medication should be given only if absolutely necessary.

Acute angiitis must be treated with corticosteroids as vigorously as if it were periarteritis nodosa, for a fatal outcome is a distinct possibility, and a firm line cannot be drawn clinically between periarteritis nodosa of the hypersensitivity type and acute small-vessel angiitis. The decision as to the mode of treatment must finally rest on an evaluation of the patient as a whole and not on the appearance of the skin alone.

Summary

The basis for the term "allergic angiitis" and some of the relationships of this inflammatory disease of small blood vessels are discussed. A classification into acute and chronic forms is proposed. The acute form begins abruptly with malaise, headache, and fever and is associated with signs and symptoms of multiple-system hemorrhagic phenomena; the skin shows an inflammatory purpuric reaction. The papulopetechial and chronic plaque forms are more benign and may have a protracted course. The systemic manifestations of allergic angiitis and the laboratory abnormalities are discussed, and a representative case is presented. Vigorous corticosteroid therapy is essential for acute systemic disease, while rest, elevation of the legs, and administration of antihistamine is recommended for treatment of the chronic cutaneous form; other medicaments are best avoided in chronic cases. The possibility of allergic factors should be thoroughly investigated.

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KNOW YOUR REFLEXES

Reflexes	Method of Eliciting	Result	Segmental Level
Corneal	Touching cornea	Bilateral blinking	5th and 7th nerves
Jaw	Jaw tapping	Jaw closing	5th nerve
Palate	Touching palate	Palate elevated	9th and 10th nerves
Biceps	Tapping biceps	Biceps contract	C5 and C6
Triceps	Tapping triceps	Triceps contract	C6 and Th1
Costo-abdominal	Tapping costal margin	Umbilicus moves	Th8 and Th9
Upper abdominal	Stroking	Transversalis and Rectus mm	Th8 to Th10
Lower abdominal	Stroking	Transversalis and Rectus, lower fiber	Th11 to Th12
Cremasteric	Stroking inner thigh	Ipsilateral testes elevates	L1 and L2
Patellar	Tapping	Vastus internus ext.	L2 to L4
Plantar	Stroking sole of foot	Dorsiflexion-ankle	L5 to S2
Achilles	Tapping	Calf muscle flexion	S1 and S2

A man makes more friends by occasionally saying "I was wrong" than by eternally saying "I am always right."

Major peripheral emboli, even when multiple, can be successfully evacuated surgically. Excellent results are presented following early and painstaking surgical clearing of the peripheral arterial vascular bed.

# ● Multiple ● Peripheral ● Embolism

FREDERICK M. OWENS, JR., M.D.
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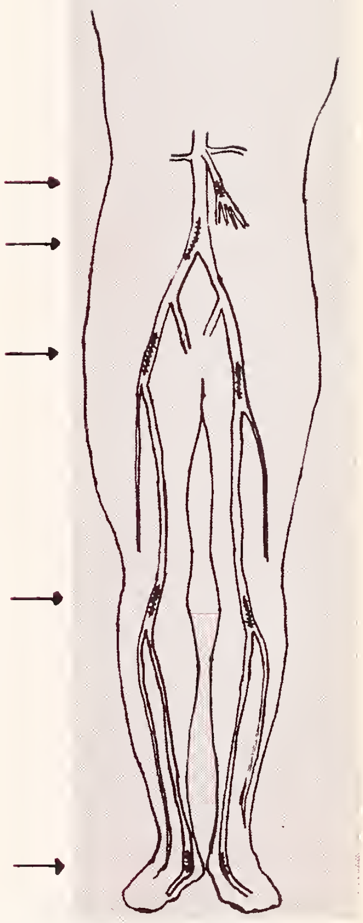

Fig. I: Case #1 Sites of arteriotomy incisions.

Peripheral arterial embolism ordinarily occurs as an occlusion of a single vessel somewhere in the peripheral arterial tree of the body but, in some instances, showers of emboli may be set free into the arterial tree extending to multiple parts of the body at one time. The emboli originate from a thrombus lying somewhere in the arterial circulation. The thrombus may be in the atrium, on the wall of the ventricle, or on the wall of aorta. As yet there is no good answer as to why embolization takes place. An embolic episode is common in patients with rheumatic heart disease but uncommon in patients with arteriosclerotic heart disease.[1] Most embolic episodes occur in patients who have auricular fibrillation and many authors postulate that conversion from arrhythmia to normal rhythm is an important cause of embolization. This is not borne out by statistical studies.(1) Investigations of sudden death following conversion of arrhythmia to sinus rhythm with quinidine therapy show little evidence of peripheral embolization as a cause of death.[1]

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*Presented before the Southern Minnesota Medical Society Meeting, September 11, 1961.

Embolectomy has become a routine procedure in large hospitals but the importance of clearing all arterial pathways of obstruction cannot be overemphasized during a discussion of the treatment of peripheral embolism. Two recent cases serve very well to illustrate this point.

The first patient is a 57 year old white woman with a seven year history of heart trouble. About the time of onset of her heart disease she had partial gastrectomy for a bleeding duodenal ulcer. She was admitted to the hospital on 9-8-59 with severe dyspnea which developed three weeks following a thyroidectomy. Admission diagnosis was severe cardiac failure with auricular fibrillation. She was treated with oxygen, digitalis, thiomerin and supportive therapy with prompt improvement.

Ten days after admission she was preparing for discharge to her home when she suddenly had a large emesis and also a large diarrhea stool at approximately 5:30 in the afternoon. While in the bathroom she stated that her feet were numb and then she collapsed while being placed in bed. Her pulse was 80 and grossly irregular and she was in shock with a blood pressure of 86/50. She complained of severe abdominal pain as well as of numbness in both legs.

Examination revealed both lower extremities to be pulseless from the groins distally. They were anesthetic, cold to the touch and cyanotic. Diagnosis of saddle embolism of the aorta was made and the patient was taken to the operating room within two and one half hours.

Upon opening the abdomen the aorta was found to be pulsating above the inferior mesenteric artery but there were no pulsations below this region. The entire small bowel was bluish in color and it was apparent that there was a superior mesenteric artery embolus as well as the aortic embolus. The iliac arteries were exposed, tapes were passed around them for hemostasis and these were drawn up. The aorta was mobilized and a tape was passed around the aorta. An incision was made in the aorta extending down to the right iliac artery and the clot was allowed to blow out by normal arterial pressure; the tape was then drawn down to the aorta for hemostasis. Clots were cleared from the lower portions of the common iliac arteries until they were completely open. After closing the arteriotomy in the aorta with 4-0 silk pulsation was adequate but the color of the legs still did not improve.

The adhesions from the old gastrectomy were freed at this point and the superior mesenteric artery exposed beneath the transverse mesocolon. The artery was mobilized but because of tissue reaction a clamp could not be placed across the mesenteric artery; therefore the artery was occluded between the thumb and forefinger of the left hand. An incision was made in the superior mesenteric artery and the clots were allowed to blow out of the arteriotomy incision. The artery was then milked from distal to proximal to make sure that small clots had been released and several clots were obtained in this manner. Flow was finally unrestricted and the arteriotomy was sutered with continuous suture of 4-0 silk. After release of the vessel the bowel became normal in color and peristalsis returned. The abdominal wound was covered and incisions were made in the groins over both common femoral arteries. Following adequate exposure of the vessels arteriotomies were made (Fig. 1) and good proximal flow of blood was obtained; although no clot was found the legs did not return to normal color. The arteriotomies were closed with continuous 4-0 silk suture and the abdominal wound was closed in routine fashion after resuturing the posterior peritoneum with continuous chromic catgut. The legs were re-prepared and both popliteal arteries were exposed with medial incisions in the lower thighs. Blood flow from above was adequate. Tapes were placed around the popliteal artery. Incisions were then made posterior to the medial malleolus in each leg, the posterior tibial vessels were exposed, and arteriotomies were made. Small catheters (#8 French) were inserted into the artery and with forceful irrigation with saline several emboli were blown out through the popliteal arteriotomy incisions. The vessels were then clear and were irrigated with dilute heparin-saline solution and the arteriotomies were closed with continuous 4-0 arterial silk. Release of the tapes produced good pulsations in the posterior tibial vessels and the color of the feet improved indicating good return of circulation. The remainder of the incisions were closed in routine fashion. The patient's condition at the termination of the procedure was excellent. She was treated with 35 milligrams of heparin intramuscularly twice a day following her surgery as well as with various cardiac medications. She made a dramatic recovery and was released from the hospital to her home seventeen days after operation. Her dorsal pedal pulses were bounding and excellent at the time of discharge from the hospital and have remained so. Two years later the patient is ambulatory, carries on a moderately restricted program of housework despite her continued auricular fibrillation. She has been maintained on anticoagulants since the time of her operation and has had no further embolic episode.

The second case is that of a 48 year old white male who in 1953 had resection of a segment of the thoracic aorta for coarctation of the aorta and replacement with an homologous aortic graft. He had been well since the time of that operation until two weeks prior to hospital admission when he noticed the onset of dyspnea. He was seen by his physician at that time and was noted to have auricular fibrillation and evidence of cardiac failure. The patient refused hospitalization; he was treated with digitalis, lost twelve pounds in weight and was very much improved. However, at 8 P.M. on 5-19-61 he had sudden onset of severe pain in the left leg and the right foot with accompanying numbness of both legs. The family noted blanching of both feet soon after the onset of this pain. He stated that he had had a similar pain in the left leg for twenty minutes on the previous day.

Examination at the time of admission to the hospital revealed that his blood pressure was 184 mm. of mercury systolic over 120 diastolic and his pulse was 160 and grossly irregular. Both lower extremities were numb, cold, and pulseless. He complained also of severe pain in both lower extremities and diagnosis of saddle embolism of the aorta was made. He was taken immediately to the operating room. Upon opening the abdomen through a right paramedian incision the bowel appeared slightly dusky but circulation of the bowel was satisfactory. The peritoneum was opened over the aorta and no pulsations were present in the lower end of the aorta or either iliac artery. Incision was made in the right iliac after a clamp had been placed across the aorta. The clot was expressed from this opening and retrograde milking of both right and left iliac arteries was carried out to remove clot from these arteries. The clamp was removed from the aorta and all of the clot was flushed from the lower aorta. Both iliac arteries pulsated freely at this time down to the inguinal ligament; therefore the arteriotomy was closed with 4-0 arterial silk. The peritoneum was closed and the abdominal incision was also closed.

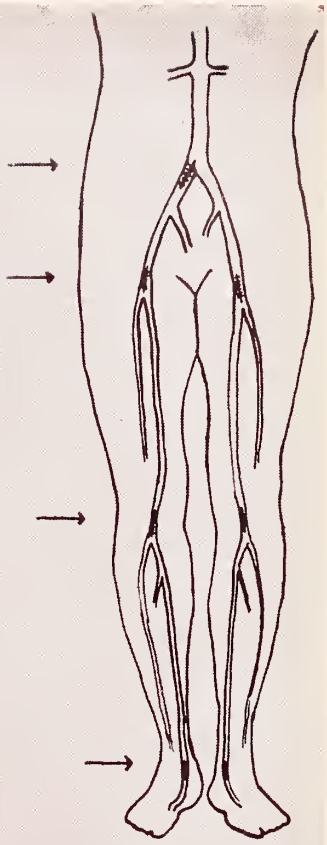

Fig. II: Case #2 Sites of arteriotomy incisions.

The legs remained cyanotic and no distal pulses could be felt. Oblique incisions were made below the groin on both sides exposing both common femoral arteries. Arteriotomy incisions were made and clots were milked in a retrograde fashion from the left and right thighs. Because good clearing was not obtained additional incisions were made in the popliteal arteries and retrograde flushing of the superficial femoral artery was carried out removing more clots from the vessels. These were of the nature of emboli and not propagating thrombi. There was no real propagating thrombus in this instance. Further incisions (Fig. 2) were made in the posterior tibial arteries on both sides and retrograde flushing of both posterior tibial vessels was carried out by inserting a #8 catheter from below upward and forcibly washing out the clots. Fragments of embolus were removed from both sides and the arteriotomy openings were closed with 5-0 arterial suture. After release of clamps from the distal portion of the superficial femoral vessels good pulsations were obtained distally and the color of the feet returned to normal. Wounds were closed and the patient was returned to his room in satisfactory condition.

He was given 50 milligrams of intramuscular heparin every eight hours. He made an excellent recovery from his operative procedure and was discharged from the hospital on 6/9/61. Since that time he has become fully ambulatory, has regained his strength and has returned to a somewhat restricted activity in his work which is that of a well driller. Pulses remain satisfactory in both feet.

Discussion

It will be noted that in both cases after the large embolus was removed from the aorta and iliac vessels there was no blood flow in the extremities. Persistent search for additional emboli and careful clearing of the arterial tree restored the circulation of the extremities in both cases. Two maneuvers are valuable for clearing the arterial tree. The first is retrograde milking of the artery and the second is retrograde flushing of the artery. Milking of the artery can be carried out by sweeping the fingers back along the exposed vessel (as was done with the superior mesenteric artery and the iliac arteries) or by a milking maneuver through the intact skin over the arterial tree. In the thighs it is usually possible to milk clots out of the femoral vessels by progressive upward compression over the vessel. This does not work as well in the leg as in the thigh for the arteries which are contained within tight compartments cannot as readily be compressed. Wrapping the leg from below upward with a rubber latex (Martin) bandage can be useful in clearing the distal arterial tree of clots.

Retrograde flushing of the arterial tree is an effective means of clearing the peripheral arterial system of blood clots. It should be used as an adjunct to milking the arteries, not as a replacement for this maneuver. An arteriotomy incision is made in the posterior tibial artery at the ankle and a #8 rubber catheter, or a polyethylene catheter, is inserted into the proximal end. Saline is injected into the vessel with considerable pressure and the clots can be recovered from a popliteal arteriotomy. Alternating pressure exerted by way of the catheter and saline is more effective in releasing the clots than steady continuous pressure.

After the arterial tree has been cleared of clots it is wise to flush the system with dilute heparin-saline solution to wash out bits of adherent thrombus and to prevent clotting of any blood which may leak into the system during the closure of the arteriotomy incisions. After blood flow has been re-established we have given the patients a minimal dose of heparin for several days. This has seemed to be useful in preventing thrombosis and yet has not created any severe bleeding problem. The Lee-White clotting time is not prolonged more than two or three minutes by the dosage employed.

The fate of the limb depends upon the site of occlusion, the degree of physiologic change associated with the lodgement of the embolus, the condition of the patient, and the delay in onset of treatment.[2] Early and vigorous treatment play the primary role in determining limb survival. Warren, Linton and Scannell have emphasized that embolectomy within 12 hours of the occlusive incident led to recovery in 63.1% of cases, while embolectomy done between twelve and forty-eight hours led to recovery in only 22.2% of cases.(3) The administration of intravenous heparin to the patient as soon as the diagnosis is made whether this be in the home, office or hospital,(4) will prevent formation and propagation of distal thrombus thus maintaining patency in the arterial tree. This creates a situation promising the best result from embolectomy. The effect of 75 to 100 milligrams of heparin given intravenously will be largely dissipated by the time the patient reaches the operating table so that there is little danger to giving a therapeutic dose of heparin preoperatively. The benefits derived from the use of heparin may amount to limb salvage which could not otherwise be obtained.

In some cases a limb may remain viable following embolic occlusion of a vessel but the resulting reduction of circulation is such that slight activity arouses ischemic pain. This type of situation may result if one is satisfied merely with limb survival and is not concerned with restoration of circulation adequate to carry out normal activity. Haimovici[5] has reported recovery of a high percentage of cases of embolism with the use of anticoagulants alone but he does not give any accurate assessment of the limitation of activity suffered by the member in question because of reduced blood supply.

Essentials of Operative Technique

The entire extremity should be prepared and exposed throughout surgery in order that assessment of circulatory return may be effected and that additional arteriotomies can be made when required. The embolus can be readily located by gentle palpation, but care must be taken to prevent breaking off fragments of an embolus or a propagating thrombus. The arteriotomy is made longitudinally and gentle traction or suction is used to extract the embolus or propagating thrombus. When the proximal artery has been cleared, 1% heparin solution should be injected into the vessel just above the occluding clamp to prevent thrombosis while the vessel is occluded. After the distal tree is cleared heparin solution is dripped into the artery while the distal arteriotomy is sutured. If back bleeding does not occur after careful milking and aspirating of the distal arterial tree, then the vessels should be opened further distally and retrograde flushing carried out.[6] Small doses of intramuscular heparin are used in the postoperative period to assist in maintaining patency of the vessels.

Summary

Two cases have been presented to illustrate the fact that early and vigorous treatment can be successful in the management of multiple peripheral embolism. The technique of management has been discussed.

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The Good in a Mean Man

There are times in the life of a mean man when he is not as mean as he is at other times.

Gratitude

Benefactors appear to love in a greater degree those whom they benefit than those who are benefited love their benefactors.

Aristotle 350 B.C.

With the sun going down life is good.

Blake F. Donaldson, M.D.

NATIONALIZED MEDICINE IN BRITAIN*

Medical care of all forms is provided in Britain through a state-operated health service which was created in 1948 by the labor government. The State provides medical care free of direct charges to the entire population, irrespective of income. All hospital and specialist care is free; all the services of general practitioners are free; and there are only nominal charges of 30¢ for prescribed drugs. The State pays specialists a salary. It pays general medical practitioners a modified form of salary. Eighty per cent of the cost has been covered by general taxation.

In recent months several of our economists have been questioning the basic arguments for nationalized medicine but signs of strain in the state service are now developing which suggest that it contains fundamental defects. The damage done may take a long time to repair.

The provision of free medical care reduces the risk of financial ruin for the individual through illness, but a system which provides it brings new problems — the problem of paying taxes — and taxes are no more popular than direct payments for medical care.

Quality of Medical Care

So much attention has been devoted to keeping down the tax cost that the effects on quality have been inadequately perceived. If a child dies during an appendectomy because the surgeon is inadequately trained, or the anesthetist is inexperienced, or the intravenous Pentathol is defective, the fact that the operation is performed free of charge is little consolation to the bereaved parents.

We must not forget that the government tends to do what the people want in a democracy, even though the wishes of the people may be harmful to themselves in the long run.

Most people believe that governments spend the money raised by taxation very lavishly, but it must not be forgotten that the State can be mean as well as generous — the State has in fact used its immense power over doctors to obtain their services inexpensively. Between 1950 and 1959 the real incomes of general medical practitioners fell by one-fifth while those of the community in general went up by about as much. The average real earnings of general practitioners last year were only 76% of what they had been in 1938 before the war. Increasingly, the demand for doctors in the nationalized hospitals in Great Britain has been for those who are willing to provide their services for low prices. With the State virtually a monopoly employer of doctors, they must either accept the terms offered by the State or leave the country or their profession. Large numbers have left the country. In the last eight years an average of over 200 British doctors emigrated to Canada each year. In the countries of the new world the professional freedom of doctors is greater, the opportunity to practice medicine well is enhanced, and the financial awards are more appropriate to the years of study, the long hours of work, and the heavy responsibility which doctors must carry.

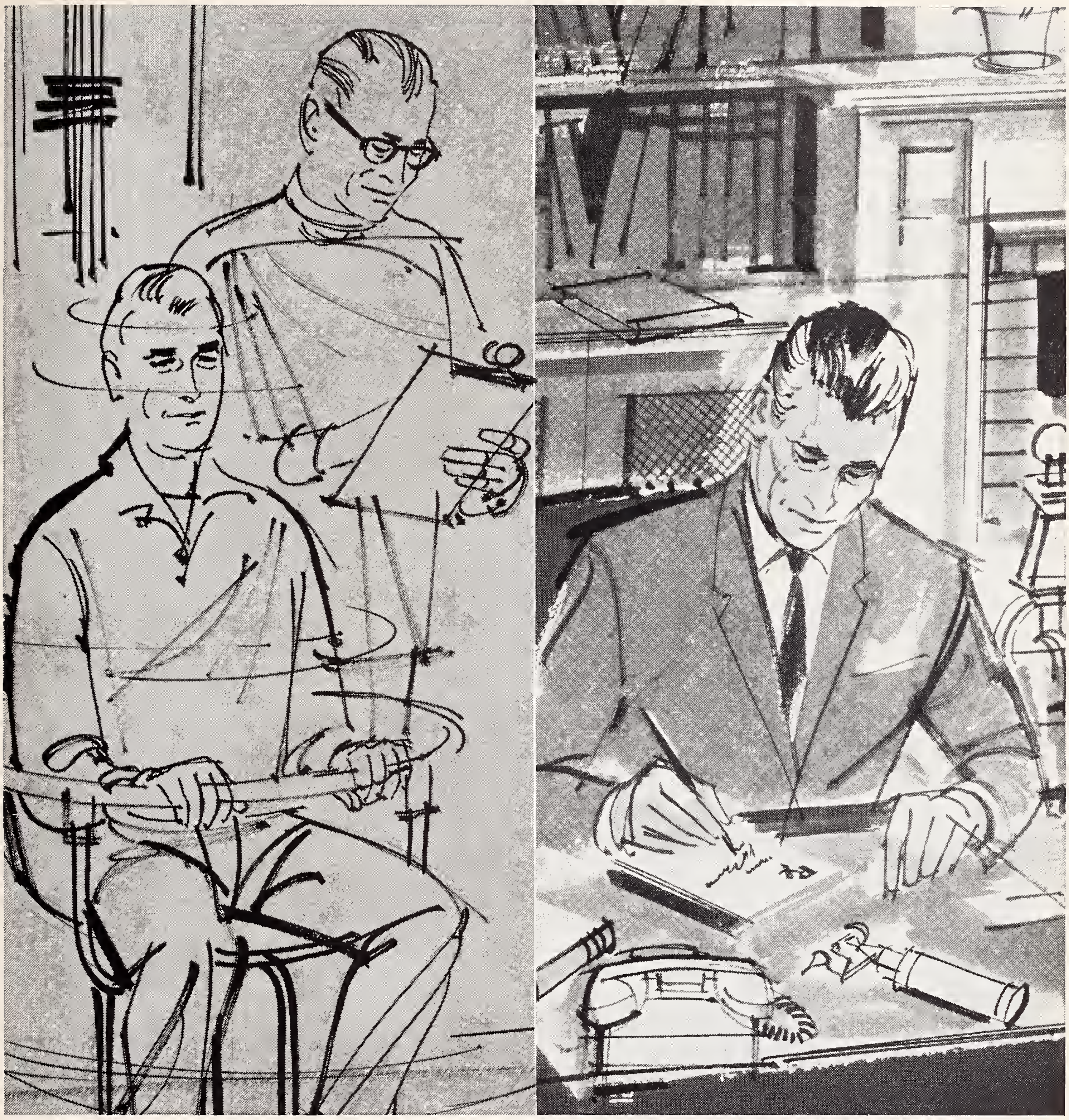
There is no system whereby the state hospitals are made to keep within specified standards for the training of graduates from overseas. To cope with the lack of British doctors the hospitals are increasingly relying on doctors from overseas. These young doctors from overseas arrive with little experience and the quality of the medical care in the hospital has diminished. Difficulty in language is one of the major problems.

Consuming the Human, Moral, and Material Capital

The success of the state health service up to the present has been due to the abundant backlog of human, moral, and material capital which it inherited in 1948. This capital, the hospital buildings and equipment, have been allowed to run down. It is now becoming apparent that the human, moral, and material capital of the health profession has been consumed and only partially replenished. This is the problem emerging in nationalized medicine.

It has been an error to assume that the major problem in medical care is cost. This was the over-simplified approach of the 1940's. This is just not true. It was certainly not necessary to nationalize all the medical facilities and personnel and provide all medical services free. The preservation of a reasonable balance between the rights and duties of the State and of the individual, which is the hallmark of a free, responsible society, is important. If you think that we shall not remedy it, then I suggest you think again.

*__John R. Seale, M.D., MRCP__ Abstract of lecture delivered in Minneapolis by John R. Seale, M.D., MRCP, who is a consultant in Medical Economics and Health Sciences in Great Britain.



in 1948
unique therapeutic achievement

in 1962
universal therapeutic acceptance

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Editorials

IT'S THERAPEUTIC TO BE OPTIMISTIC

A man was driving by a state psychiatric hospital when a wheel fell off his car. He walked some distance down the road to the garage to get the burrs necessary to secure the wheel to the chassis. An inmate who was viewing this asked why he did not take one burr off each wheel and use them to replace the wheel that fell off. The man being rather surprised at this astute solution to the problem said, "How is it that such an intelligent man as you is confined to this place?" The psychiatric patient replied, "I may be crazy, but I'm not stupid." This story illustrates how we generalize about the competence of psychiatric patients. Since they are defective in some areas, we expect them to be defective in all areas.

Evidence that people do not want to be identified with psychiatric patients is easy to find. Most of us are self-conscious about our neurotic tendencies; most of our patients were reluctant in telling us about their previous psychiatric difficulties. This past year, I conducted a weekly discussion session with a group of psychiatric nurses. They desired not to be identified as psychiatric patients. They felt the average patient could not talk about sex and aggression, so they were quite determined to talk about these things in spite of its making them uncomfortable. They did not want to be reassured; patients need reassurance.

This belief that psychiatric patients are fundamentally inferior and different to the rest of us has unhappy consequences. It leads psychiatric workers to state that the mentally ill prefer to be behind locked doors; that they enjoy punishment; or that they prefer being delusional and hypochondriacal. Though in part and in a sense true, this type of thinking soon becomes destructive. The most destructive element in this line of thinking is that people in contact with psychiatric patients expect little of value or worth.

This is a poor state of affairs because people tend to live up to the expectations that others have of them. If others think we will do well, we think so too.

Experiments have been conducted which indicate how important the opinions of others are as to the opinions that we ourselves will have on any particular subject — including the subject of our own mental competence. Seven people were placed in a room and were instructed to say that Line A, a short line, was longer than Line B, a long line. Another person was placed with these seven people. He was uninformed as to the instructions that the other seven had and he was asked to give his idea as to which was the longest line. When he did, the others gave their opinions and began disputing with him. The seven stuck to their instructions and eventually the latter individual began to see the lines as defined by the seven people.[1] People do influence each other.

It is easy to see that if a person is uncertain about whether or not he should go ahead in a job or some other endeavor, he may be swayed by what a therapist says to him. If the therapist expresses faith, he is more likely to try again.

The therapist who is depressed and pessimistic about himself is likely to lack good judgment as to the capabilities of his patients, since he tends to perceive the patient as he perceives himself. He should have some measure of optimism in order that he and the patient can see realistically the patient's opportunities for action, renewed endeavor, and new trials.

Ivan W. Sletten, M.D.
Medical Director
Hastings State Hospital
Hastings, Minnesota

Asch, S. E. Studies of Independence and Conformity: I. A Minority of One Against A Unanimous Majority. Psychol. Monogr., 1956, **70**, (Whole No. 416).

Long-term effectiveness of METICORTEN continues to be demonstrated in J. G., the arthritic miner whose case was first reported a year ago and who is leading a fully active life today, *after seven years of therapy.*

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Abstracts and Briefs

SUCTION DRAINAGE UNDER SKIN FLAPS

The author has listed three cases exemplifying certain complications arising from the use of perforated suction catheters under broad skin flaps. One such complication occurred from the application of compression dressing over the skin flaps containing a catheter. Another occurred from placement of the catheter parallel to the suture line, thus compromising blood supply across the area of the catheter. The third problem arose from contamination of costal cartilages by the tip of the catheter, apparently secondary to irrigation.

The author believes that the use of such catheters to evacuate air and fluid is an important addition to large excisional surgery. However, in view of these problems, he suggests that no dressing be applied for pressure over the flaps, that the tube be carefully placed in horizontal position to the incision, and that care be taken not to directly contact cartilaginous tissue. He further suggests that the catheter be irrigated under sterile precaution with an antibiotic solution and a fibrin liquifier.

It is a practice of the author to employ the catheters as long as fluid is still forming and in some instances up to six days. However, he recommends early removal.

The employment of suction under large skin flaps has been an excellent means of reducing the complications of serum and blood collection under large skin flaps, such as in radical mastectomy and radical groin dissection. It is worthwhile to note the experience of such complications as described above, in that by forewarning, such problems might easily be avoided.

J. H. Strickler, M. D.
Minneapolis, Minnesota

"Some Hazards of Suction Drainage of Large Skin Flaps" McCallum, G. T., Ann. Surg. 154:991, Dec. 1961.

CARCINOID TUMORS OF THE SMALL BOWEL

A series of 209 cases of carcinoid tumor of the small intestine forms the basis for the current review from the Mayo Clinic. The authors summarize historical aspects related to this unique lesion. Interestingly enough, although this is a relatively rare neoplasm, it is the most common tumor found in the ileum. The diagnosis was made at autopsy in 137 instances, with only four of these patients having had symptomatic tumors. To the contrary, fifty-two of the seventy-two surgically treated patients had clinically symptomatic tumors. Ninety-three percent of the fifty-six patients with symptomatic tumors had metastases, while only nine percent of those found incidentally had metastases.

Pathologically, primary carcinoid tumors in the small bowel tend to be small, multicentric, and frequently associated with other primary malignant neoplasms.

Obstruction is the initial problem in most patients who have symptoms and this usually only occurs at an advanced stage of the disease. Symptoms of a vague indefinite nature often occurred for several years prior to recognition of the tumor.

Metastasis, when it occurs, usually first involves the mesentery by direct extension, then the mesenteric lymph nodes, and lastly the liver. Spread beyond the abdomen is extremely rare.

The results of surgery are rather good, the five year survival rate for patients with operable tumors being 68%. Even patients with inoperable nodal or peritoneal metastases had a 38% survival rate, while 21% of patients with hepatic metastasis survived five years. Palliative resections are definitely worthwhile.

The physiology of the Carcinoid Syndrome is described. Fourteen patients in the series had such functioning tumors.

This excellent review of the carcinoid tumor lends encouragement to an aggressive therapeutic approach to an unusual type of neoplasm. Application of extirpative therapy will prove considerably more rewarding in this lesion than in the usual malignant neoplasm. Clinicians must learn to be suspicious of a small intestinal carcinoid tumor in patients with a relatively prolonged history of symptoms of partial obstruction.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Life History of the Carcinoid Tumor of the Small Intestine" Moertel, C. G., Sauer, W. G., Docherty, M. B., and Baggenstoss, A. H.; Cancer, 14:901 Sept.-Oct., 1961

CANCER OF THE BREAST

After reviewing historically the medical advances resulting in improved mortality and survival rates during the past 60 years, the authors point out the distressing fact that the ultimate prognosis for the woman with breast cancer remains poor. They have analyzed the records of 1,458 women with breast cancer treated at the Yale-New Haven Medical Center from 1921 through 1957. The object of the study was to evaluate the factors responsible for survival and possible correlations between such factors which could be useful in determining prognosis.

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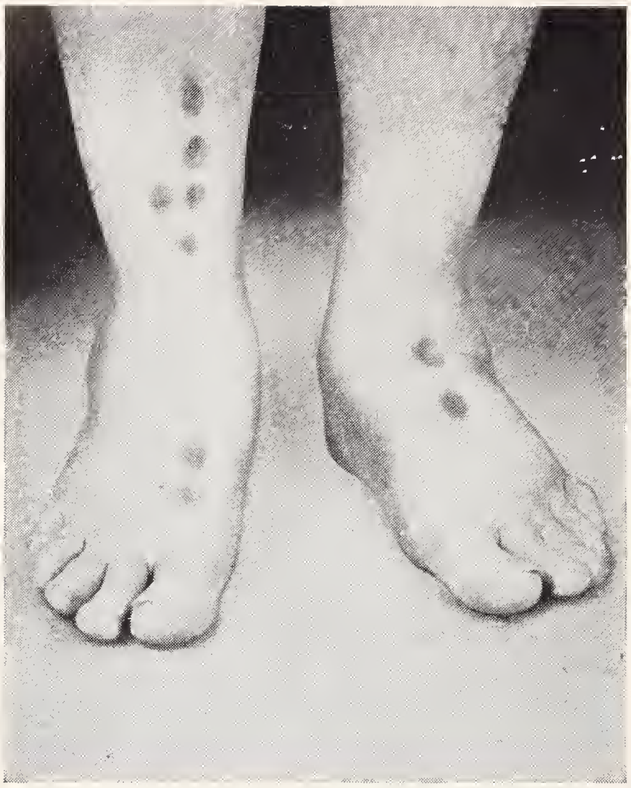

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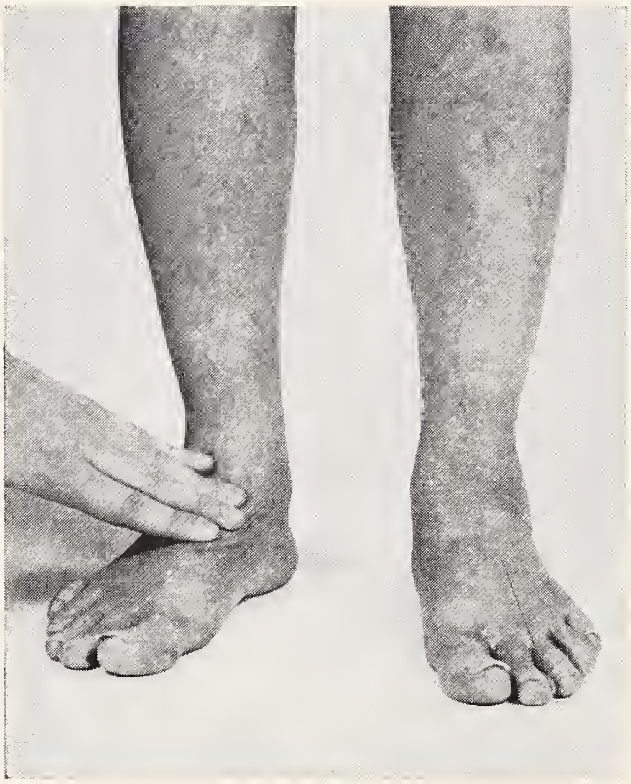

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The most favorable results occurred in the middle-aged, premenopausal woman with a small lesion in the upper, outer quadrant. Factors which adversely effected survival were edema, fixation, satellite nodules, obvious metastases, involved axillary lymph nodes, pregnancy, and lactation.

Analysis of the mode of therapy disclosed poorest results in patients with no treatment at all. Radiation therapy alone improved this result at 5 years, but had no significant difference at 10 years. Despite the use of simple mastectomy primarily in poorer risks, the 5 year survival rate was as good as that of radical mastectomy, but was much less at 10 years. Postoperative radiation following radical mastectomy gave a lower survival than radical mastectomy alone, but this probably reflects the application of radiation to patients known to have more advanced disease.

Although the end results of treatment of breast cancer reflect little overall improvement over the years, the accumulation of data such as that presented is useful in the estimation of prognosis. Unfortunately, one can carefully study data such as these and still feel a frustrating lack of ability to spectacularly influence the results of his therapy in the individual case.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Female Breast Cancer" Goldenberg, I. S., Bailar, J. C., Hayes, M. A. and Lowry, R.; Ann. Surg.; 154:397, September, 1961.

DIVERTICULITIS OF THE RIGHT COLON

A collected series of 318 cases of cecal and ascending colon diverticulitis is reviewed in this paper which includes eighteen cases from the authors' personal experience. Eighty per cent of colonic diverticula occur in the sigmoid and descending colon, and only 2% in the cecum and 4% in the ascending colon. Generally, right-sided diverticula occurred in younger individuals, the average age being forty-one years. The diagnosis is rarely correctly established pre-operatively, since the symptoms closely mimic those of appendicitis. Barium enema is the most helpful diagnostic aid.

Many patients have a mass when first seen, and carcinoma is sometimes suspected. Other conditions must also be considered when an inflammatory mass is found at surgery, i.e. tuberculosis, actinomycosis, amebic cecitis, carcinoid, and regional enteritis.

Alternate surgical technics are discussed as methods of handling the various manifestations of diverticular disease of the right colon.

The points made in this review emphasize the fact that there is no minor surgery. Anyone undertaking treatment of surgical conditions of the right lower abdomen must be prepared and able to properly manage any of the many serious problems which may mimic ordinary appendicitis.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Diverticulitis of the Cecum and Ascending Colon" Wagner, D. E. and Zollinger, R. N.; Arch. Surg., 83:124, Sept., 1961.

DIVERTICULITIS OF THE COLON

The experience with diverticulitis of the colon for the past decade at Peter Bent Brigham Hospital is the source of material for this review. It consists of 100 surgically treated cases.

Consideration of the clinical findings reveals all patients to have had abdominal pain. Most of them noted a bowel habit change. Low back pain was relatively common (28 patients). About one-third had blood in the stool, but massive bleeding was rare.

The physical signs and sigmoidoscopic findings are discussed, but barium enema remains the most helpful diagnostic measure. A gentle barium study is considered a safe procedure. It not only helps establish the diagnosis, but assists in the differential from carcinoma, and delineates the status of the distal bowel.

The indications for surgery are: complications of diverticulitis (perforation, abscess, hemorrhage, obstruction, and fistulae), persistent local involvement, and any situation where the question of carcinoma is involved.

The types of surgical procedures are described and their applicability to varying situations discussed. Of particular interest is the trend in recent years toward one-stage procedures in properly selected instances.

Current surgical management of the problems of diverticulitis of the colon is excellently reviewed by the authors. Very apropos is their point that the broad spectrum antibiotics may cause subsidence of the acute episode, but does not abolish a potentially dangerous situation. Thus, one must not be lulled into a false sense of security in such circumstances. The protean manifestations of diverticulitis require the most carefully considered judgment of both the attending physician and surgeon. Reviews such as the one summarized will assist the concerned physician to maintain familiarity with the current status of management.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Diverticulitis Coli" Botsford, T. W., and Curtis, L. E.; N.E.J.M., 265:618, Sept. 28, 1961.

DRUG-INDUCED PARKINSONISM

It is known that approximately 15 per cent or more of patients receiving phenothiazine drugs in high therapeutic dosages develop symptoms of parkinsonism in a few weeks. The reason why some patients are susceptible to these drugs while others are not is unknown. This study was undertaken to determine if an hereditary susceptibility to this drug-induced parkinsonism exists.

Of the relatives of patients who developed drug-induced parkinsonian symptoms, approximately 1.8 per cent had parkinsonism. This is much higher than the 0.39 per cent incidence among the relatives of control cases, and higher than that which is expected in the general population. These findings suggest that there may be an hereditary susceptibility to parkinsonism produced by phenothiazine and further studies are in progress to confirm these findings.

R. G. Siekert
Rochester, Minnesota

"Hereditary Predisposition in Drug-Induced Parkinsonism." Myrianthopoulos, N. C. Kurland, A. A., and Kurland, L. T. AMA Arch. Neurol. 6:5, Jan., 1962.

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AEROSOL TREATMENT OF OTITIS EXTERNA

A variety of medicaments have been employed in the treatment of otitis externa, most of which have been limited in their use because of the difficulty in reaching all the affected areas. The authors evaluated the efficacy of a prednisolone-neomycin aerosol and a dichlorisone-neomycin aerosol (Metiderm with neomycin and neodiloderm aerosol) in 36 consecutive cases of otitis externa. Twenty-one patients had the disease from 6 months to 10 years while the other 15 patients complained of the otitis externa from a few days to several weeks.

The technic of application consisted of holding the aerosol container 3 inches from the meatus and spraying for 3 to 4 seconds. While spraying, the eye was shielded with a wet washcloth. The patients applied the medication 4 to 6 times a day and when necessary used peroxide to cleanse the canal.

Marked improvement was seen within 12 to 24 hours in the cases treated in this manner. After one week of therapy all that remained was a residual enrythema. One relapse was noted in the series, this occurring 5 months after cessation of therapy. The only side effect noted was in one patient who complained of burning during the period of application.

"Though this was not a controlled study, this approach might be worthy of trial."

A. S. Zelickson, M.D.
Minneapolis, Minn.

"Steroid-antibotic Aerosols: A Practical Modality in Otitis Externa." Gant, J. Q. and Gould, A. H.; Med. Ann. of D. C., 30:528, 1961.

CEREBROSPINAL FLUID GLUCOSE

The relation of the concentration of glucose in the blood and in the spinal fluid was studied in dogs which were made hypoglycemic or hyperglycemic by the administration of insulin or of glucose, respectively. The change in the glucose concentration in the blood is reflected in the cerebrospinal fluid after a latent period of up to thirty-nine minutes. Evidence is presented that the interchange of glucose between the blood and cerebrospinal fluid is not by simple diffusion, but is the result of an active transport system. The authors conclude that the blood sample should be taken about thirty minutes before the cerebrospinal fluid when a comparison is to be made between the glucose concentrations.

R. G. Siekert
Rochester, Minnesota

"Relations of Blood and Cerebrospinal Fluid Glucose." Myers, G. G., and Netsky, M. G. AMA Arch. Neurol. 6:18, Jan., 1962.

CYSTIC DUCT REMNANTS

Unsatisfactory results following cholecystectomy occur in three groups of patients: 1) Those whose symptoms were not the result of biliary tract disease, even though they may have had cholelithiasis, 2) Those in whom new complaints develop after cholecystectomy (i.e., a previously asymptomatic common duct stone, iatrogenic ductal injuries, or inflammatory scarring and distortions), 3) Patients in whom remnants of the gall bladder or cystic duct have been left behind. Patients in the last group are the ones which interest the authors in the current review.

Illustrative cases are presented in detail and the reviews of other authors are summarized. Instructive x-rays and diagrams depict a variety of situations resulting from incomplete cholecystectomy.

The common symptom of pain and the common sign of jaundice are in themselves non-diagnostic. Since the development of intravenous cholangiography in 1953, it has been possible to accurately delineate the postoperative biliary ductal conditions in many patients. The development of this new technic and an increasing awareness of the condition have resulted in more frequent demonstration of this cause of post cholecystectomy symptoms.

Ninety-five patients with cystic duct remnants have been treated at the New York Hospital-Cornell Medical Center in the 28 years since 1932, two-thirds of them being treated in the last five years. Seventy-three of the group had their primary surgery performed elsewhere.

Forty-three per cent of the patients with retained cystic duct remnants had calculi. Eleven had calculi in the retained cystic duct stump only. Eleven others had calculi in the common duct, but not in the residual cystic duct. Four patients had both. Eight of the fifteen patients with common duct stones did not have clinical jaundice. In 83% of patients having intravenous cholangiography the study either definitely established the presence of a cystic duct remnant, or choledocholithiasis, or the failure to visualize suggested biliary or liver disease.

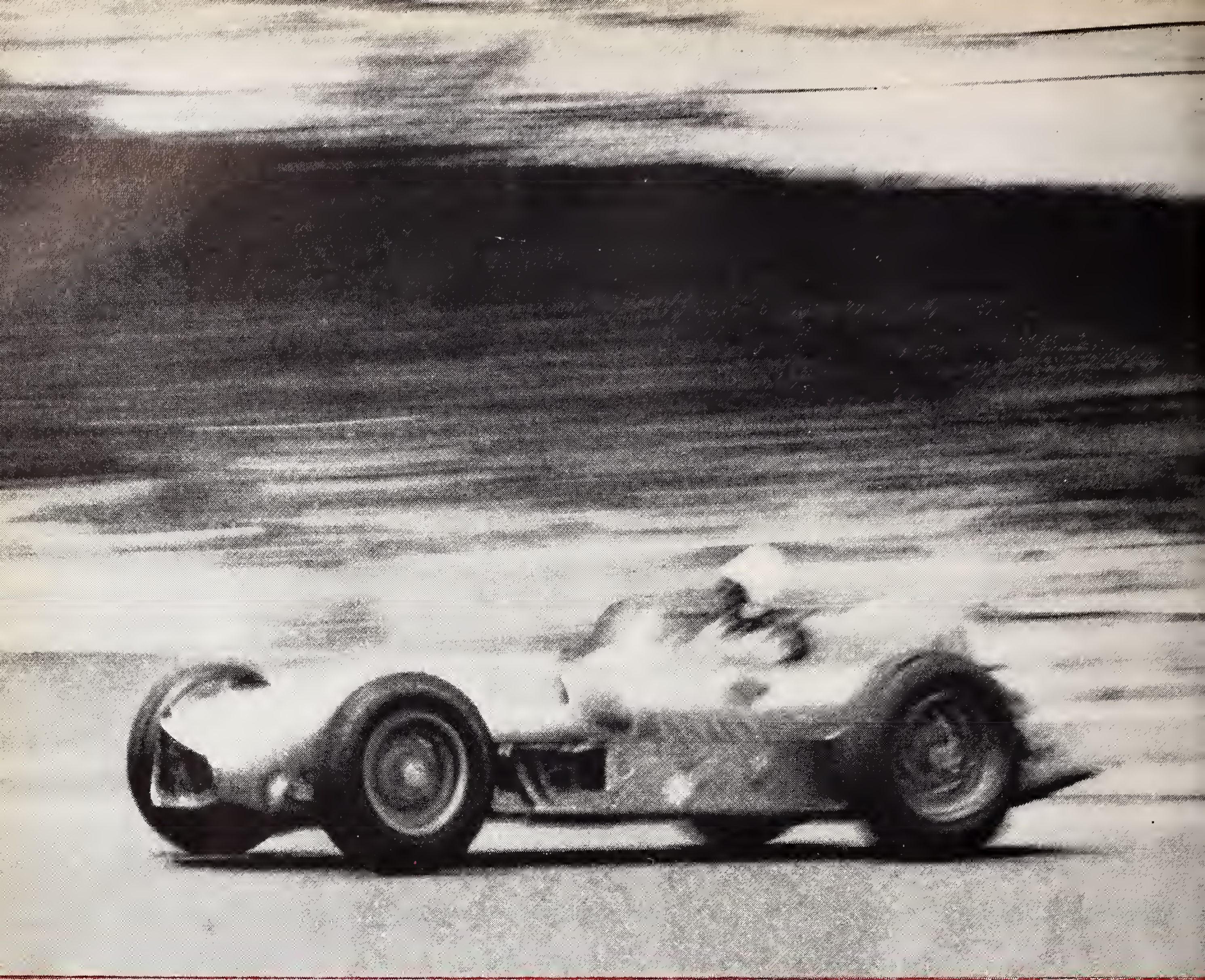
Anomalies of the hepatic artery, common duct, and site of junction of the cystic and common ducts occur in 15 to 20% of patients. The authors suggest unequivocal identification of structures, meticulous dissection of the anatomy, careful hemostasis, and individual ligation of cystic duct and cystic artery.

When thorough pre-operative evaluation has established the presence of a cystic duct remnant, and other possible causes of symptoms have been excluded, the specific treatment should be complete excision of the remnant and common duct exploration.

The number of patients with unsatisfactory results from cholecystectomy, particularly where the fault lies in improper surgical technic, justifies a respectful regard for biliary tract surgery. The potential disabilities from a "simple gall bladder" requires that the operator exercise a high degree of surgical proficiency and judgment. Prevention of retained cystic ducts should be nearly always possible in elective cholecystectomy. In the event of persistent or recurrent post-cholecystectomy symptoms intravenous cholangiogram may delineate a correctable condition. From the data presented in the study from Cornell a common duct exploration should constitute a part of any procedure for residual cystic duct stump.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"The Surgical Treatment of Cystic Duct Remnants" Glens, F. and Whitsell, J. C., S. G. & O. 113:711, December, 1961.



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Book Reviews

DIAGNOSIS AND THERAPY OF THE GLAUCOMAS. By Bernard Becker M.D. and Robert N. Shaffer M.D. F.A.C.S. St. Louis, C. V. Mosby Company, 1961. 360 pages, 230 illustrations, 5 color plates, general section references, index. Price: $18.00.

Unfortunately many textbooks are "out of date" before they are printed. These authors are to be commended for giving us their up-to-date diagnostic classification and treatment plan of the widespread eye disease complex glaucoma, based on very recent major advances in understanding the actual cause of each type. This has been made possible by application of diagnostic techniques such as practical clinical visualization of the anterior chamber recess, measurement of the facility with which fluid can be expressed from the patient's eye, and more accurate and standardized approximation of the actual pressure within the eye. In general glaucoma can be said to be a drainage insufficiency of intraocular fluid resulting in increased pressure with consequent circulatory embarrassment of the optic nerve leading eventually to blindness. Major groups are distinguished by being either primary or secondary, with or without pupillary or angle block. In addition new drugs such as long-acting anticholinesterases and carbonic anhydrase inhibitors plus the "rediscovery" of older agents such as urea and epinephrine have enabled effective long-term control, withtout resorting in many cases to surgery, where the disease "outlives" the patient. Exceptions include progressive field loss with optimal medication where artificial filtration must be established, rare pupillary block glaucoma where iridectomy is a primary curative procedure and infantile glaucoma.

The general clinician should be aware of several facets of this specialized subject. Unfortunately only about half of known, untreated simple glaucoma patients will show elevated intraocular pressure. This is especially true of near-sighted individuals who, because of abnormal ocular rigidity giving false low pressure readings with the tonometer, may go on to far-advanced field loss without the disease, which is annoyingly asymptomatic, ever being suspected. However with combinations of newer techniques and appropriate provocative tests over 90 per cent of patients can be detected early. Also about 20 per cent of relatives of patients with known simple glaucoma will be found to have early or late signs of the disease so that consultation should be recommended. Finally, there seems to be a critical balance between the systemic blood pressure and the intraocular pressure in perfusing the optic nerve. Thus occasionally patients with well-controlled glaucoma will show rapid deterioration of their visual fields if their hypertension is overzealously corrected by newer drugs.

William S. McClanahan M.D.
Chinon, France

COMMON SENSE ABOUT PSYCHOANALYSIS By Rudolph Wittenberg, M.D. Published by Doubleday, 1962, 214 pages.

This short, well-written treatise by a practicing psychoanalyst is really a question and answer exercise. The questions are the usual ones that a physician might be asked by his patients particularly when psychiatric referral is considered. The answers given in this book are the considered opinions of a "Freudian" analyst who, while an obvious enthusiast for his sub-speciality, also recognizes the limitations of formal psychoanalysis and the contributions of "other forms of psychotherapy."

Typical of these questions are "What goes on in an analysis?," "How long does it take?," "Why does it cost so much?" The answers given are definite and illuminaing and are amplified by the use of interesting, well-selected case material. Where there may be differences of opinion as, for example, in answering the questions "Are other forms of psychotherapy just as effective?," or "What is the required training for an analyst?," the author generally presents all sides fairly.

This book effectively fills a need for a concise, understandable resume of the practical aspects of psychoanalysis and can be highly recommended to the physician, Mental Health Worker, or sophisticated patient who is curious about psychoanalysis but not eager to delve deeply into psychoanalytic theory.

John K. Torrens, M.D.
Albuquerque, New Mexico

THE DOCTOR'S BUSINESS—Richard Carter. Doubleday & Co., Inc. Price $ .95.

Richard Carter has been a medical writer for many years. The Doctor's Business deals interestingly with a considerable number of the political and economic problems which confront the physician. He indicates, perhaps not always correctly, how medical politicians move step by step from minor offices to the national activities of the medical profession. He deals with medical delinquency and indicates that despite the activities of the American College of Surgeons the only obstacle to fee splitting is the individual conscience.

Though many of the criticisms of the medical profession are no doubt factual, and he does give credit to the medical profession for many of its worthwhile things, one gains the impression that the criticism from Richard Carter's pen is out of proportion to the sins which have been committed.

Nevertheless, it would be well that doctors read this pocket size manuscript in order to help us evaluate ourselves as others see us.

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[1] Ford, R. A., and Blanchard, K: Journal Lancet 78:185, 1958.

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Special Article

The Challenge of Medical Research

WESLEY W. SPINK, M. D.[**]
Minneapolis, Minnesota

A distinguished medical scientist speaks for the profession; the far-reaching contributions of the author provide a stimulating and entertaining story in the control of brucellosis.

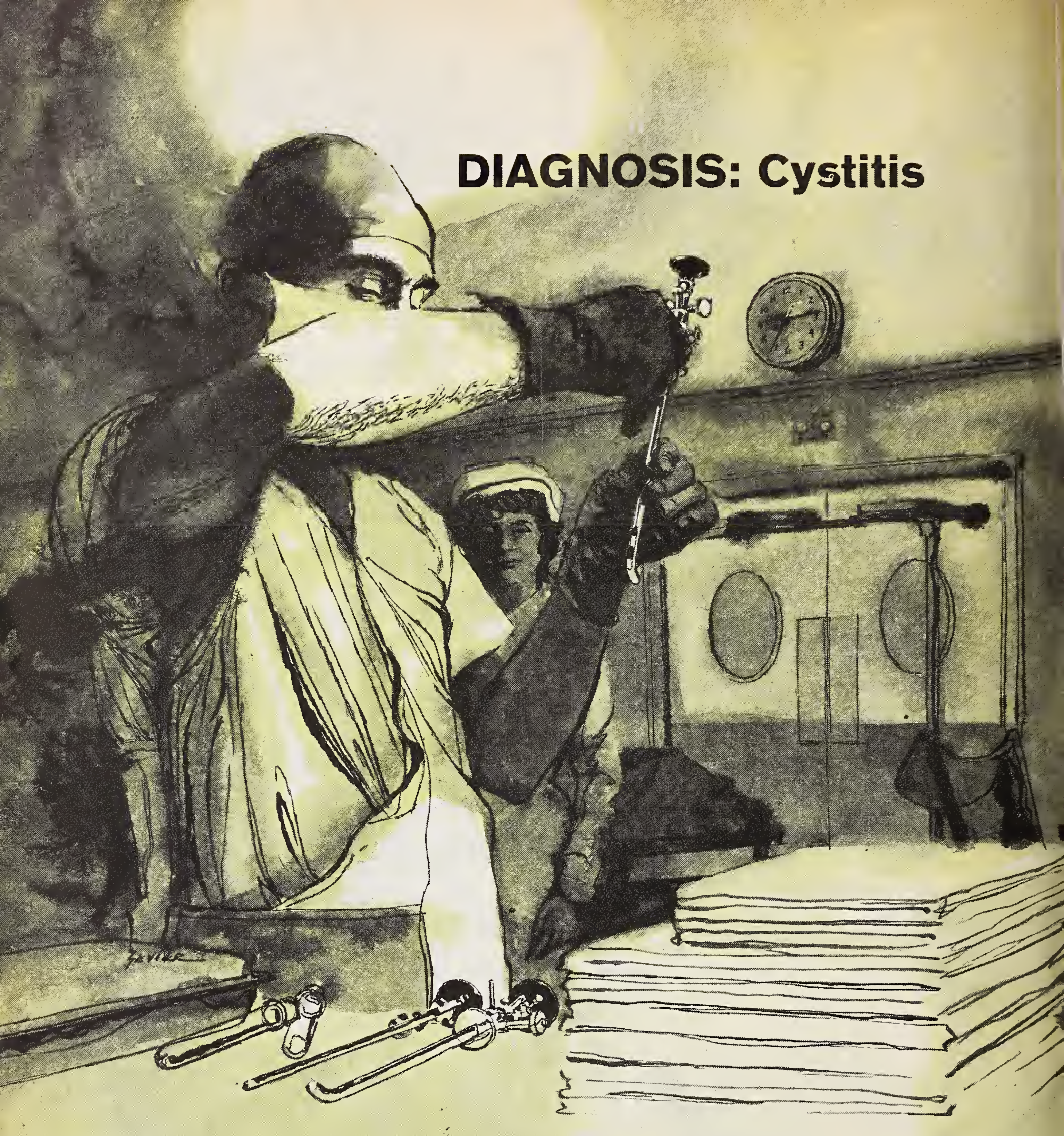
I am pleased to talk to the student body and faculty of Augsburg College. First, because I have a deep and abiding respect for the small liberal arts college where the spirit of Christian ethics prevails. Secondly, a faculty and its curriculum are best judged by the students that graduate from the institution. As a former member of the admissions committee of the University of Minnesota Medical School, I had many occasions to judge the excellency of Augsburg graduates. Thirdly, I have always had a great deal of admiration for your President, Dr. Bernhard Christenson, whom I regret to hear is retiring this year. And finally, I was glad to have been asked to speak on the subject of Medical Research, because it stimulated me to review the course of events bordering on my own career in Medicine.

---

[*]Convocation address given at Augsburg College, Jan. 4, 1962

[**]Professor of Medicine, University of Minnesota Medical School.

DIAGNOSIS: Cystitis



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The Impact of Science in the Twentieth Century

The Twentieth Century has been characterized in many ways, but of one thing we can be certain, it is a century in which the scientist is well in the foreground. For better or for worse, this scientific ascendancy with its technological developments has accomplished more than at any other time in history. Many are seriously concerned by the predominance of science and believe that it is warping our thinking and our culture. They fear that there is a serious dichotomy of cultures separating the scientist from the non-scientist. This division of our society has been expressed in the following way by C. P. Snow, a distinguished British scientist and writer:

> "I believe the intellectual life of the whole western society is increasingly being split into two polar groups: at one pole we have the literary intellectuals, who incidentally while no one was looking took to referring to themselves as 'intellectuals' as though there were no others; at the other [pole] scientists, and as the most representative, the physical scientists. Between the two a gulf of incomprehension — sometimes (particularly among the young) hostility and dislike, but most of all lack of understanding. Non-scientists tend to think of scientists as brash and boastful, shallowly optimistic, unaware of man's condition. On the other hand, the scientists believe that the literary intellectuals are totally lacking in foresight, peculiarly unconcerned with their brother men, in a deep sense anti-intellectual, anxious to restrict both art and thought to the existential moment." [1]

Others have lugubriously joined Snow by condemning this age of specialization. Men have become so highly specialized and narrow in their thinking that communication between various professional and technical groups is becoming more and more difficult. Apprehension has been expressed in medical circles because the dependable general practitioner is giving way to the medical specialists, leaving society without the counsel and benefit of the family doctor.

My own viewpoint is less pessimistic. This scientific age has brought with it technical developments that have given our nation the highest standard of living of any country in the world. The fruits of this accomplishment have spilled over to less fortunate nations. It is largely because of this we are the envy and target of the Communistic countries. Whether or not we abuse our advantage is another matter. Specialization in the practice of medicine has presented to the American people advantages that were undreamed of in the last century. On the other hand, this has increased the cost of medical care, and has caused a thinning of the ranks of the devoted family physician.

It is highly unlikely that the advancements of science and technologic development can be, or should be, impeded. However, the avenues of communication should be kept open between specialists, and between scientists and non-scientists. This presupposes a constant effort to understand others, their ideals, and their frustrations. After all, is this not the mark of an educated person? Is not the purpose of a liberal arts education to give the student a wide sweep of the arts and the sciences, and to encourage critical thinking? A college education should introduce one to a way of life; to a habit of continuing inquiry that will extend all through his days. Such an education should also mean the acquisition of decent sense of values.

On the Choice of a Career—Academic Medicine

Most of us like to believe that the choice of a career is based upon decisive thinking or events. In reality, such a selection is often the result of fortuitous factors, such as the influence of other individuals and the opportunities of the moment. One can often look back and point to the remarkable impact that certain of his teachers had upon his life. In my own case my father introduced me at an early age to the enjoyment of books. Perhaps because of this, an English teacher in high school and an English professor in college profoundly influenced my education, although science was my major subject in both secondary school and college.

Continued

"Feel any different now, Mr. S.?" "I thought nothing was happening, Doctor... but then my wife saw a change ...said I wasn't fighting all the time. People at the office seemed easier to work with." "How about drowsiness?" "No, not when I need to stay awake."

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I had decided upon a medical career in high school. Chemistry was my favorite subject, and this early orientation has been reflected in my medical research. During my college years, I became increasingly interested in teaching, but it was not until much later that I decided on a career of teaching and medical research. After graduating from college I taught for two years in a small liberal arts college.

During my collegiate years in the roaring twenties I was greatly influenced by my reading. Your invitation stimulated me to read again three or four of these volumes after an elapse of more than 30 years. One of them, "Arrowsmith" by Sinclair Lewis, vividly portrays the life of a medical student, general practitioner and medical scientist. Lewis was assisted in developing this novel by Dr. Paul DeKruif, a medical scientist, who later wrote the ever popular and stimulating "Microbe Hunters." I am sure that many other young undergraduates were also directed in some way by these two works. But the book that was to influence my medical career more than any other was "The Life of William Osler" written by Harvey Cushing, the distinguished brain surgeon, who was Professor of Surgery at Harvard. This great work directed my steps toward Harvard Medical School, because I thought for a while a surgical career would be my choosing.

In Medical School my career was definitely shaped by the influence of two men. My Professor of Bacteriology and Immunology was Dr. Han Zinsser, who fired up my interest in microbiology, which was to be the basis of my future career in medical research. I have read and re-read his two books, "Rats, Lice and History", which is a biography of the disease typhus, and "As I Remember Him", which is autobiographical, and written when he knew that a fatal disease would snuff out his life shortly. I would rank his autobiography along with "The Education of Henry Adams" as two of the greatest American autobiographies.

Up until my final year in Medical School I appeared to be headed not for surgery, but for the practice of pediatrics. However, during this year another great teacher was to shape my career almost in dramatic fashion. I presented to him one day on the wards of the Boston City Hospital a patient with an acute illness, presumably due to an infection. The disease turned out to be trichinosis, which is caused by eating undercooked pork infested with the parasite, **Trichinella spiralis.** This Professor of Medicine, Dr. George Minot, stimulated me to carry out my first medical research, which was on this disease. Later I entered the Thorndike Memorial Laboratory of the Boston City Hospital, which is associated with Harvard, to continue my postgraduate training. Dr. Minot was the Director of the Thorndike and received the Nobel Prize for discovering liver as the treatment for pernicious anemia. Widely acclaimed and honored throughout the world, he still took time on many occasions to counsel me on my research problems. During these years I was also guided by another remarkable physician, Dr. Chester Keefer, who subsequently was to direct the investigations on penicillin during World War II.

In contrast with my undergraduate years during the prosperous twenties, my postgraduate period extended during the long years of the economic depression of the thirties. Both my associates and myself had little or no income, which did not interfere with our work. It was an exciting time in many respects. I was associated with competent and industrious young men, many of whom later became Professors of Medicine in the leading medical schools of this country and elsewhere. Medical research proved to be both frustrating and exhilarating, and there was little question what I would do upon the completion of my training in 1937. I would stay in academic medicine, and I was selected to join the faculty of the University of Minnesota Medical School.

Medical Research on Brucellosis

I started in 1937 at the University Hospitals, sharing in the care of patients and teaching. It was an exhilarating period for research in the field of infectious diseases, because that was the year the first of the sulfa drugs was introduced for the treatment of patients. During the ensuing quarter of a century, right up to the present time, I have been interested in evaluating new drugs and antibiotics for infectious diseases. The greatest single advancement in medical science in my life time has been the introduction of chemotherapeutic drugs for infections. Millions of people the world over have benefited from these agents.

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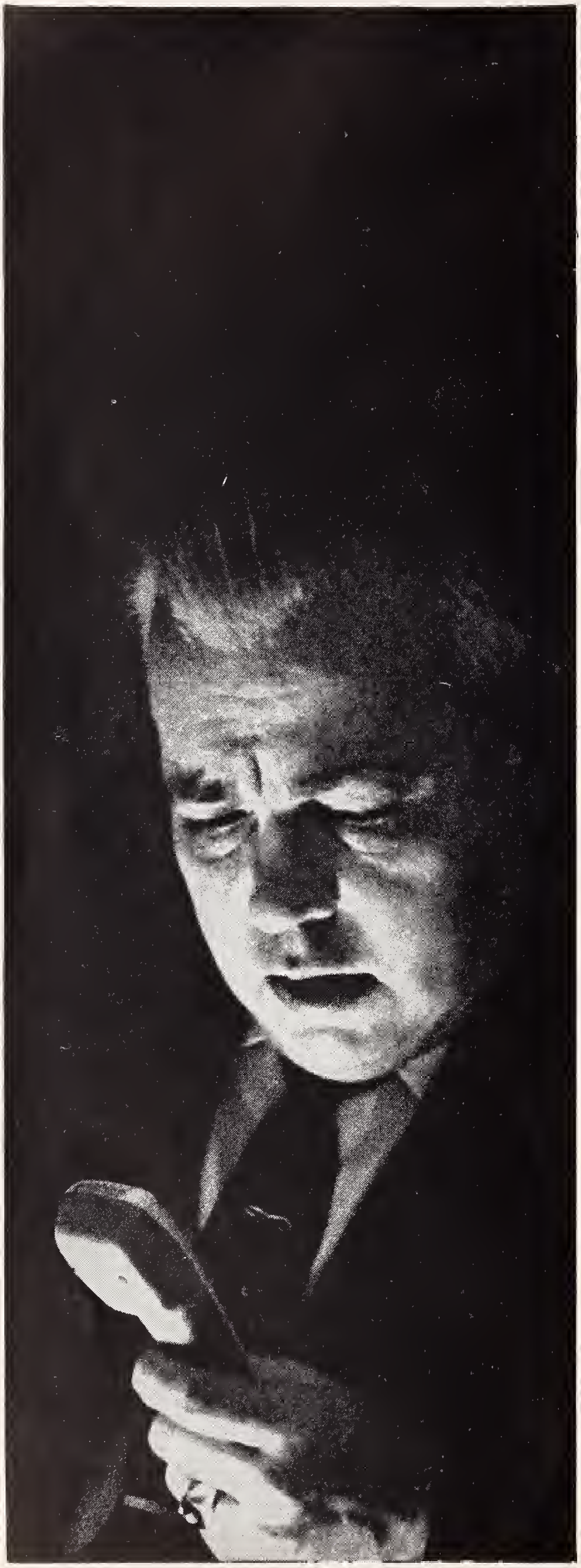

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Much of my own efforts in medical research and those of many of my young associates have been devoted to the study of the disease brucellosis, or undulant fever. This is an infection of cattle, called Bang's disease, which is transmitted to human beings through drinking unpasteurized milk, and by direct contact of farmers, livestock owners and packing plant employees with the fresh tissues of diseased animals. Brucellosis also afflicts sheep, goats and swine. There are over 80 diseases of animals transmissible to man, and throughout the world brucellosis is the number one disease.

Interest in brucellosis was engendered in August 1937 when a young farmer with chills and fever was seen as a patient at the University Hospitals. His infection was fatal because Brucella organisms had localized on his heart valves. He had abortions in his cattle due to Bang's disease, and he had contracted the disease in handling infected bovine tissues. One doesn't like to lose patients, but at that time there was little to do, since there was no effective treatment for the disease. Within a month a second farmer with the same type of fatal complication was seen. He, too, had had Bang's disease in his cattle. Beginning at this time, our interest in brucellosis became crystallized along several lines. How extensive was this disease in Minnesota? How was the disease contracted? What was the nature of the human infection? What were the most valuable diagnostic procedures? But above all, were there any effective drugs for treatment?

Fortunately, extensive interest in this disease was already under way in two areas at the University. For many years investigators in the School of Agriculture at the University of Minnesota had been at work on brucellosis in animals. And the Laboratories of the Minnesota State Board of Health on the campus of the University had been interested in the diagnosis of human brucellosis. These two groups were most helpful, and emphasized the value of multiple disciplines found in a large University, which is so important in the pursuit of medical research.

Our activities were largely curtailed during the years of World War II, but by 1945 we had learned that a large number of cases of human brucellosis existed in Minnesota. Most of the illness resulted from contact with infected animals on farms and in meat packing plants, although a significant number of people became infected through drinking unpasteurized milk.

It became more and more apparent that human brucellosis would never be eliminated until the source of the disease in infected animals was eradicated. It also meant that cow's milk for human consumption should be pasteurized. Although we recognized the problem, it was an entirely different matter when it came to resolving that problem. We left the ivory tower of medical research, endeavoring along with others to get the State Legislature to pass a law which would make it mandatory for only pasteurized milk to be sold for human use. This was our first lesson in dealing with pressure groups that muster their strength to defeat progressive social legislation. It would be economically disastrous to compel small milk producers to install pasteurizing machines. Others were sincerely and vociferously against pasteurizing milk because the process destroyed the health benefits of raw milk. All these opponents were voters, and the bill did not pass. We were successful, however, when a wise member of our faculty, Professor J. O. Christianson of the School of Agriculture, suggested that I speak on the danger of humans using raw milk at the annual gathering of farm wives from around the state. I did, and these women went home and put the pressure on their husbands and legislators. This effort helped, and a bill was successfully introduced and accepted as law in the Minnesota State Legislature.

For over 10 years I participated in a campaign at state and national levels in attempts to enlighten livestock producers and farmers on the public health menace of animal brucellosis. The basic solution was to slaughter a heavily infected herd of cattle and vaccinate young stock against the disease. But here again, there was a clash of economic interests and measures for protecting the health of the public. I was witness to many bitter and harsh discussions around the country in company with representatives of the Bureau of Animal Industry of the U. S. Department of Agriculture. But steady progress was made on a Federal-State cooperative basis. This is reflected in a marked decline in the incidence of human brucellosis in the United States, because the infection is being eliminated at its source, namely, in cattle.

Continued

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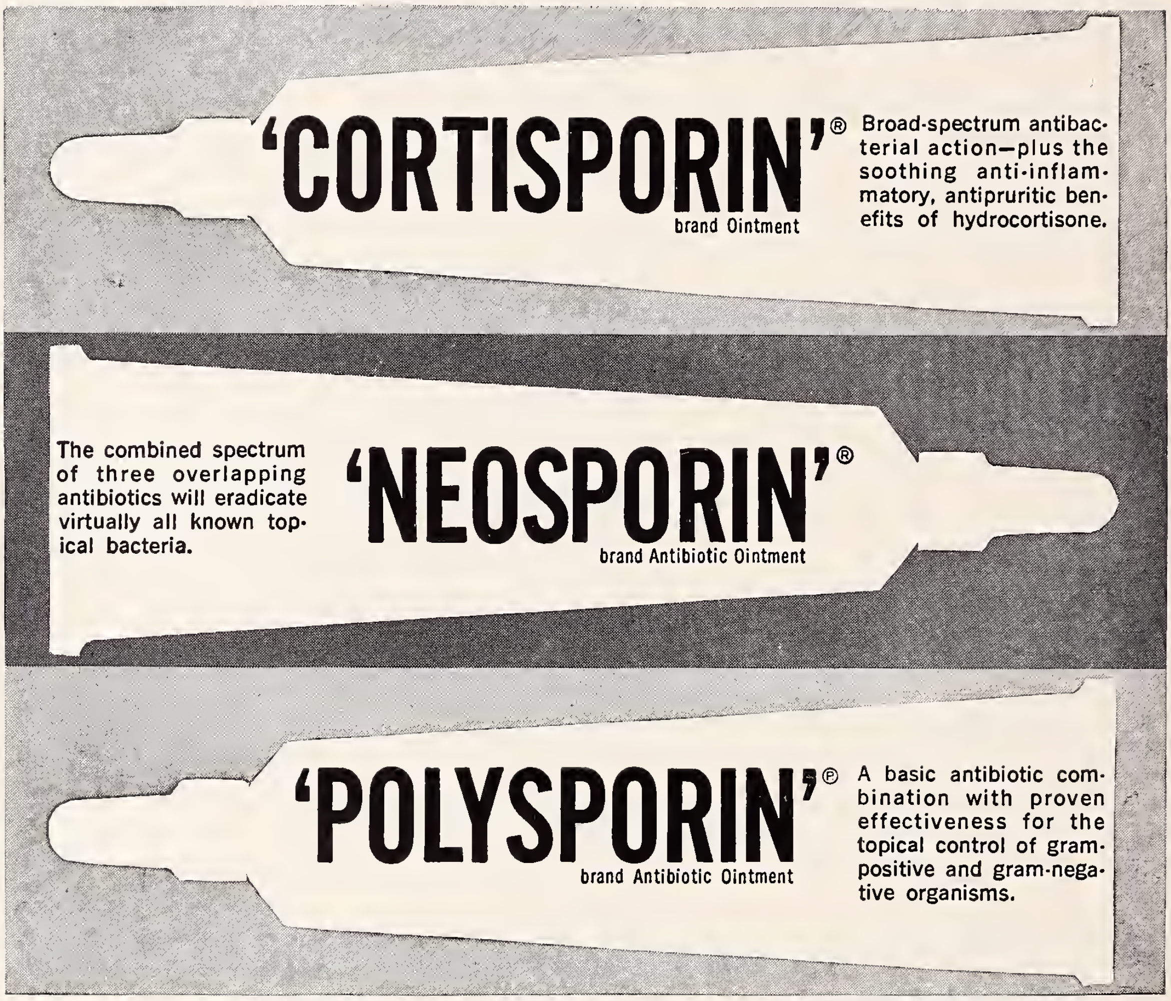

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Our most productive efforts in medical research were along two lines. First, in studying human brucellosis, and the infection in animals, we learned a great deal about the basic nature of the disease, which proved helpful in interpreting puzzling features in other infections. Second, through the laborious process of screening drugs in the laboratory and then in humans we now have a reasonably effective treatment for the disease. We have learned that the antibiotic, tetracycline, is now the most acceptable drug for human disease. Much of our medical research has been discussed in a volume published by the University of Minnesota Press, entitled "The Nature of Brucellosis".

The National Research Council and Brucellosis

I have discussed briefly our research, and also our attempts at informing the general public about brucellosis. My serious participation in the general problem of brucellosis on a national level really began in 1947 as Chairman of the Committee on Public Health Aspects of Brucellosis of the National Research Council. But before describing this work, I should tell you briefly about the National Research Council, which plays such a major role in the various scientific efforts in the United States.

During the administration of President Abraham Lincoln, a non-governmental agency was set up in Washington, which would best serve the country on a consultative basis. The National Academy of Sciences was organized, and election to this body was based on scientific distinction. This organized body of scientists, representing the many fields of the natural and biologic sciences, formulated the National Research Council, which could call upon not only the Academy members, but any competent scientists, for the purpose of consulting on a problem in the interest of public welfare. Our Committee on Brucellosis was rather unique in that we had a group of outstanding experts on brucellosis from the U. S. Public Health Service, veterinarians, as well as those interested in human medicine. Our outstanding achievement was to bring together essential information on the public health aspects of human and animal brucellosis in the United States. Definitive statements were published under the jurisdiction of the National Research Council. In cooperation with the U. S. Public Health Service and the Association for the Advancement of Science, a Symposium on Brucellosis was held in Washington in 1949, the proceedings being published in a volume on human and animal brucellosis.

This committee in cooperation with many other agencies and groups in the United States was highly effective toward controlling brucellosis. Factual evidence for the need of control, how it could be accomplished, and leadership were provided over a period of years.

The World Health Organization and Brucellosis

After World War II interest in brucellosis was not only aroused in the United States, but also in the countries of Central and South America. In view of this hemispheric apprehension over the disease, the First Inter-American Congress on Brucellosis was held in 1946 in Mexico City, and the Second in Argentina in 1948. These meetings brought together a nucleus of individuals, who were experts in the various phases of brucellosis, and who exchanged information that proved to be valuable to groups in the different countries.

The Third Inter-American Congress on Brucellosis was held in Washington, D. C. in 1950 and was rather unusual in several respects. The Committee on Brucellosis of the United States, which was the Committee of the National Research Council, and the Pan American Sanitary Bureau, was responsible for arranging this program. At this time, a world-wide interest in brucellosis was expressed, as the Pan American Sanitary Bureau was the official Regional Office of the World Health Organization for the Americas. WHO, the health arm of the United Nations, was set up in 1946. There are six regions in the world of which the Pan American Sanitary Bureau was one. WHO is a successor to the Health Organization of the League of Nations, and its purpose is a cooperative endeavor to better the health of all peoples through the exchange of information and technical assistance.

The Congress meeting of 1950 resulted in a wide exchange of information on brucellosis, and the results were published in a volume of over 300 pages. It became more apparent that brucellosis was a serious problem in many areas of the world. The disease not only resulted in human sickness, but brucellosis in cattle, sheep, goats and swine resulted in a lower production of meat and milk. It was also clear that some countries were in urgent need of advice and help in solving their individual problems on brucellosis.

Continued

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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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The health and welfare of large numbers of people were involved. At the conclusion of the Congress, an Expert Committee on Brucellosis under the World Health Organization and Food and Agriculture Organization held its first meeting. An international attack on brucellosis was under way. Furthermore, several WHO/FAO Brucellosis Research Centers were designated. There were to be three in the Western Hemisphere, one in Argentina, one in Mexico, and one in the United States. The Center for the United States and Canada, which I have directed, was located at the University of Minnesota Medical School. The purpose of these regional centers was to coordinate information on brucellosis and to exchange this with other Centers. Problems in the diagnosis and management of both animal and human brucellosis could be referred to the Centers.

Consultant to WHO on Brucellosis

Following the first meeting in 1950 of WHO's Expert Committee on Brucellosis a second meeting was held in Florence, Italy in 1952, and the third meeting was in Lima, Peru in 1957. Over the years this group of a dozen or so men have exchanged ideas and information freely, and three technical reports on animal and human brucellosis have been published in order to aid workers in the field of brucellosis throughout the world.

In addition to working on this Committee, I have served as a Consultant for WHO to various governments. In 1951, I made visits to the Brucellosis Centers in England, France, Italy and Yugoslavia. It was particularly interesting to travel through the latter country at that time because the Iron Curtain had only recently been lifted permitting the entrance of WHO personnel.

The Government of Spain requested consultation on their brucellosis problem and in 1952 I spent three weeks there. This trip was prefaced by many months of hard work in trying to master the rudiments of the Spanish language. In 1955, I made a visit to North Africa to see the personnel and work at the Pasteur Institute in Tunis. Brucellosis had been the subject of intensive scientific inquiry at this institute for many years. During the same visit I journeyed to the Island of Malta, and there I had occasion to see where much of the original work on Malta fever had been carried out. By coincidence, I lectured at the Medical School of the Royal University of Malta on the Hundredth Anniversary of the birth of David Bruce, who discovered the cause of human brucellosis in Malta, while a member of the British Army Medical Corps. After the meeting of the Expert Committee in Peru in 1957, I journeyed on to the Brucellosis Centers of the rest of South America, including Chile, Argentina, Uruguay and Brazil.

In 1959 a special Committee meeting was held in Geneva, headquarters of WHO, for the purpose of passing judgement on a Brucella vaccine composed of living bacteria for immunizing human beings against brucellosis. Russian investigators had used such a vaccine with apparent success. The problem was to decide if such a vaccine should be released under the auspices of WHO to many of the countries where the disease was not being controlled. The Committee decided to have a safety test carried out, and the University of Minnesota Brucellosis Research Center was designated to head up this project. This study was done in 1960—and as it became obvious that the vaccine was not safe, WHO will not distribute the material.

Conclusions

In conclusion I have tried to give you some ideas about medical research by referring to my own career. Medicine is a jealous mistress. Achievement, as in any other creative effort, is the result of much hard work and self discipline. Anything worthwhile takes effort, and one must be prepared to share success with moments of despair and frustration. But there have been many fringe benefits, such as travel and the cultivation of friendships all over the world. But the most precious professional possession that I have is membership and recognition in a great University.

Finally, I would like to impart one final thought to you. I often tell this to our own students. No matter what you do, try to do your level best at all times. At an early period select out some challenging phase of your daily occupation or profession. Read about it; observe; write; travel—and then after 20 to 30 years this may bring you recognition and friendship among a similar group of individuals. Such an endeavor will give you more enjoyment and satisfaction than money can ever buy.

Reference

1. Snow, C. P.: The Two Cultures and the Scientific Revolution, New York, Cambridge Univ. Press, 1959.

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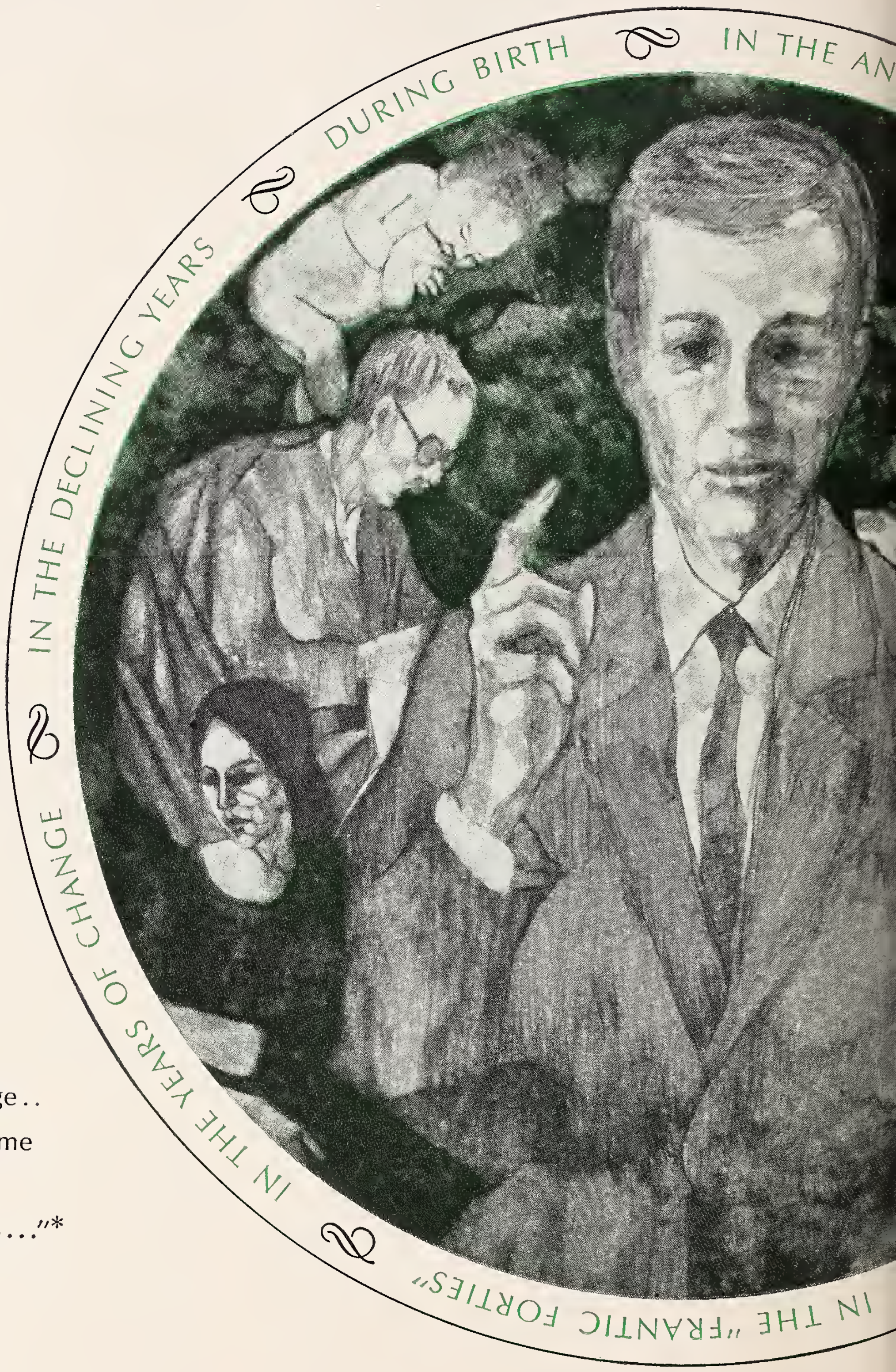
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IN THE DECLINING YEARS
IN THE YEARS OF CHANGE
IN THE "FRANTIC FORTIES"

"All the world's a stage..
And one man in his time
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***As You Like It*, Act II, Sc. 7

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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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The Annual Meeting of your Minnesota State Medical Association will be held in Minneapolis from May 21 through May 23.

The Committee on Scientific Assembly has prepared an outstanding program. Throughout the two and a half days of scientific program, each session will be in the form of a symposium, and you will be given the opportunity to participate during the question-and-answer period that will follow the presentations. The technical and scientific exhibits, as well as the major portion of the scientific program, will be presented in the Minneapolis Auditorium (Grant Street between 3rd Avenue South and Stevens).

Meetings of the House of Delegates, Council and various committees of your Association will be held beginning on Saturday, May 19 through Wednesday, May 23, at the Leamington Hotel. The following is the program for this 109th Annual Meeting of the Minnesota State Medical Association.

REFERENCE COMMITTEES OF THE HOUSE OF DELEGATES

Meetings: Sunday, 8:00 p.m.; Monday, 9:30 a.m.
Leamington Hotel

SCIENTIFIC REFERENCE COMMITTEES

Medical Education Reports...Sunday: President Adams Room — Monday: New York Room

H. A. Vogel, New Ulm, Chairman; A. S. Anderson, Minneapolis; L. W. Johnsrud, Hibbing; G. B. Martin, Thief River Falls; B. J. Mears, St. Paul; Ernest Olson, Pine Island.

Miscellaneous Scientific Reports... Sunday: President Taft Room — Monday: Philadelphia Room

A. E. Brown, Rochester, Chairman; R. B. Benjamin, Minneapolis; E. J. Richardson, St. Paul; A. M. Scheidel, Mankato; M. P. Virnig, Wells; H. E. Wilmot, Litchfield.

NON-SCIENTIFIC REFERENCE COMMITTTES

Credentials........................Registration desk, Iowa Room (Meets only before House convenes)

V. M. Johnson, Dawson, Chairman; W. H. Burnham, Minneapolis; L. E. Steiner, Albert Lea.

Medical Economics Reports... Sunday: President Lincoln Room — Monday: Chicago Room

J. A. Blake, Hopkins, Chairman; R. O. Bergan, Duluth; Barnard Hall, St. Paul; C. H. Hodgson, Rochester; M. M. Howell, Glencoe; D. O. Osborn, Austin.

Miscellaneous Medical Economics Reports... Sunday: President Jefferson Room — Monday: Milwaukee Room

G. D. Davis, Rochester, Chairman; C. A. Anderson, Hector; J. W. Gridley, Arlington; W. G. Johanson, St. Paul; G. C. MacRae, Duluth; D. J. Studer, Faribault.

Officers and Councilors Reports... Sunday and Monday: President Washington Room "B"

O. L. Norman Nelson, Minneapolis, Chairman; W. J. Deweese, Bemidji; W. C. Ferguson, Walnut Grove; O. M. Heiberg, Worthington; B. F. Pearson, Shakopee; J. L. Sprafka, St. Paul.

Resolutions... Sunday and Monday: President Washington Room "A"

Les N. Dale, Red Lake Falls, Chairman; E. C. Bayley, Lake City; C. C. Cooper, St. Paul; A. B. Hunt, Rochester; L. A. Nash, St. Paul; R. A. Rossberg, Morris.

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BUILDS *sense of well-being in the weak and debilitated*

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NOW—the **highest** anabolic plus the **lowest** androgenic activity* with well-tolerated WINSTROL therapy

...for elderly patients with anorexia, asthenia and general debility—
MARKED IMPROVEMENT IN APPETITE, STRENGTH AND SENSE OF WELL-BEING

Fourteen patients, age 66 to 77, treated with Winstrol, usually in a dosage of 6 mg. daily, for various periods in order to correct underweight, weakness and chronic fatigue. Marked improvement occurred in appetite, sense of well-being and strength; almost all patients gained weight.

...for patients with osteoporosis and arthritis—
RELIEF OF PAIN, IMPROVEMENT IN MOBILITY

Twenty-one patients with arthritis treated with Winstrol for pain and limited mobility due to osteoporosis. With few exceptions, dosage was 6 mg. daily; duration of treatment varied from a few weeks to 6 months. In 8 patients relief of symptoms was excellent and in 6 moderate. Of the 7 persons in whom no relief was obtained, 5 had received treatment for less than one month and some had been given doses below 6 mg.

...for patients with malignant disease—
NOTABLE WEIGHT GAINS, INCREASED APPETITE AND SENSE OF WELL-BEING

Twenty-six patients, mostly women, weak, emaciated and seriously ill, were administered Winstrol in dosage of 6 mg. daily for periods extending up to 14 months (average 6.7 months). Notable weight gains occurred. Patients showed increased appetite, alertness and confidence, better appearance, increased mobility and tolerance to pain.

...for patients with chronic, non-malignant disorders—
IMPROVEMENT IN WEIGHT AND GENERAL ACTIVITY, INCREASED SENSE OF WELL-BEING

Eight patients with advanced tuberculosis, bronchopulmonary disease, nephritis and ulcerative colitis treated with 6 mg. of Winstrol daily for from 3 to 4 months. Gains in weight varied from 6 to 27 pounds with increased sense of well-being and improvement in general activity.

...for undernourished, underweight children and adolescents—
NOTABLE IMPROVEMENT IN APPETITE AND OUTLOOK, MARKED INCREASE IN WEIGHT AND HEIGHT

One hundred and twenty children, age 1 to 11 years, underweight and in poor health, were given Winstrol for several months. Majority received daily dosage of from 2 to 4 mg. In nearly all, appetite was improved. Over 70 per cent showed significant gains in weight of from 5 to 17 pounds.

DOSAGE: Usual adult dose, one 2 mg. tablet t.i.d. just before or with meals; children from 6 to 12 years, up to 1 tablet t.i.d.; children under 6 years, ½ tablet b.i.d. Available in bottles of 100 tablets.

Complete bibliography and literature available on request. Before prescribing, consult literature for additional dosage information, possible side effects and contraindications.

*animal data

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WINSTROL

patients look better...feel stronger—because they are stronger

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Business Sessions

COMMITTEES
LEAMINGTON HOTEL

SUNDAY, MAY 20

8:00 P.M.—Reference Committees:

Medical Education Reports	President Adams Room
Miscellaneous Scientific Reports	President Taft Room
Medical Economics Reports	President Lincoln Room
Miscellaneous Medical Economics Reports	President Jefferson Room
Officers and Councilors Reports	President Washington "B" Room
Resolutions	President Washington "A" Room

MONDAY, MAY 21

8:00 A.M.—Committee Breakfasts

Child Health and Immunization	President Lincoln Room
Diabetes	" " "
General Practice	" " "
Hospitals and Professional Relations	" " "
Insurance Liaison	" " "
Maternal Health	" " "
Medical Advisory	" " "
Military and Veterans Affairs	" " "
Public Health Education	" " "
Public Policy	President Wilson Room
Rheumatology and Rheumatic Diseases	President Lincoln Room

9:30 A.M.—Reference Committee Meetings

Medical Education Reports	New York Room
Miscellaneous Scientific Reports	Philadelphia Room
Medical Economics Reports	Chicago Room
Miscellaneous Medical Economics Reports	Milwaukee Room
Officers and Councilors Reports	President Washington "B" Room
Resolutions	President Washington "A" Room

TUESDAY, MAY 22

8:00 A.M.—Committee Breakfasts

Athletic Injuries	President Lincoln Room
Blood and Blood Banks	" " "
Cancer	" " "
Civil Defense and Civilian Disaster	" " "
Industrial Health	" " "
Judicial	" " "
Medical Service	" " "
Ophthalmology	" " "
Professional Liability	" " "
Rehabilitation, Medical Committee on	" " "
Rural Medical Service	" " "
State Health Relations	" " "

WEDNESDAY, MAY 23

8:00 A.M.—Committee Breakfasts

Anesthesiology	President Lincoln Room
Board of Editors	President Roosevelt Room
Historical	President Lincoln Room
Radiation and Radio-Active Isotopes	" " "
Statewide Congressional	President Wilson Room

COUNCIL, HOUSE OF DELEGATES AND COUNTY OFFICERS
LEAMINGTON HOTEL

SATURDAY, MAY 19

2:00 P.M.—Council Meeting ....President Hoover Room

6:00 P.M.—Council Dinner ....President Hoover Room

SUNDAY, MAY 20

8:00 A.M.—Council Breakfast..President Hoover Room

2:00 P.M.—House of Delegates Meeting ....Iowa Room

6:00 P.M.—New Members, County Officers and Delegates Dinner ....Minnesota Room

8:00 P.M.—Reference Committee Meetings ....See Above

MONDAY, MAY 21

8:00 A.M.—Council Breakfast....President Hoover Room

9:30 A.M.—Reference Committee Meetings ....See Above

TUESDAY, MAY 22

8:00 A.M.—Council Breakfast....President Hoover Room

9:00 A.M.—House of Delegates Meeting ....Twin Cities Room

WEDNESDAY, MAY 23

8:00 A.M.—Council Breakfast....President Hoover Room

Continued

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POISON IVY
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2¼ fluid ounces
ZIRIUM
lotion
ZIRIUM® LOTION
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PREVENTS
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OF:
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**Helps prevent poison ivy dermatitis.*

**Relieves symptoms of Rhus dermatitis.*

Zirium® Lotion contains 4% Zirconium oxide and 2% Thenylpyramine hydrochloride in a pleasant, easy to apply lotion. The Zirconium oxide inactivates the toxin of the Rhus plants, while the synthetic antihistamine gives prompt relief to the typical itching and burning of poison ivy, oak, and sumac as well as relief from the pain and itching of insect bites, hives, and other minor skin irritations.

Precautions: Not for prolonged use nor for applying to large areas of the body. Discontinue use if skin irritation develops or persists. Contraindications: not for internal use, not to be used in the eyes.

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Scientific Program

Monday

MINNEAPOLIS AUDITORIUM
Chairman: Herman E. Drill

A.M. Visit Scientific and Technical Exhibits

10:00 SYMPOSIUM ON CARDIOVASCULAR DISEASE
Moderator—O. L. N. Nelson, Minneapolis
How Do You Study the Patient with High Blood Pressure?
John F. Fairbairn, II, Rochester
When and How Should the Patient Be Treated?
Arthur C. Kerkhof, Minneapolis
Harbingers of a Stroke
Jack P. Whisnant, Rochester
Questions and Answers
Does Fat in the Diet Cause Atherosclerosis?
Ivan D. Frantz, Minneapolis
What About Tobacco?
Alexander Schirger, Rochester
Which Patients Need Long-term Anticoagulant Therapy?
A. Boyd Thomes, Minneapolis
Questions and Answers
Chairman: John V. Thomas

P.M.

12:15 ROUND TABLE LUNCHEONS

2:00 SYMPOSIUM ON UPPER ABDOMINAL DISEASE
Moderator—William B. Martin, Duluth
Pain Patterns in Upper Abdominal Disease
Donald E. Ralston, Rochester
What's Causing the Jaundice?
James B. Carey, Jr., Minneapolis
Treatment of Liver Disease
Harry N. Hoffman, II, Rochester
Questions and Answers

3:15 Intermission
Visit Scientific and Technical Exhibits

4:00 SYMPOSIUM ON NEWER CONCEPTS IN TREATMENT OF INOPERABLE CANCER
Moderator—L. O. Underdahl, Rochester
Use of Hormones
B. J. Kennedy, Minneapolis
Use of Drugs
Joseph M. Kiely, Rochester
Use of Radiation
Donn G. Mosser, Minneapolis
Questions and Answers

8:30 FIRESIDE CONFERENCE ON CARDIORESPIRATORY DISEASES . . . Leamington Hotel

Tuesday

MINNEAPOLIS AUDITORIUM
Chairman: Charles E. Rea

A.M. Visit Scientific and Technical Exhibits

9:00 SYMPOSIUM ON HEADACHES
Moderator—A. B. Baker, Minneapolis
Characteristic Headache Patterns
Charles M. Jessico, Duluth
How Are These Headaches Produced?
Joseph G. Rushton, Rochester
Practical Therapy of Headaches
Zondal Miller, St. Paul
Questions and Answers

10:15 Intermission
Visit Scientific and Technical Exhibits

11:00 SYMPOSIUM ON WEAKNESS, DIZZINESS, FAINTNESS AND FITS
Moderator—Robert G. Siekert, Rochester
Erland R. Nelson, Minneapolis
Jerome A. Hilger, St. Paul
Donald W. Mulder, Rochester
Questions and Answers
Chairman: Charles C. Cooper

P.M.

12:15 ROUND TABLE LUNCHEONS

2:00 SYMPOSIUM ON WHIPLASH INJURIES
Moderator—Lyle A. French, Minneapolis
Harry B. Hall, Minneapolis
Richard M. Steinhilber, Rochester
Mr. Sidney P. Gislason, New Ulm
Questions and Answers

3:15 Intermission
Visit Scientific and Technical Exhibits

4:00 SYMPOSIUM ON EARLY CARCINOMA OF THE CERVIX
Moderator—James J. Swendson, St. Paul
Technique of Cervical Smears
Charles H. McKenzie, Minneapolis
Cytology and Pathology
Edward H. Soule, Rochester
Selection of Cases for Surgical Management
John S. Welch, Rochester
Role of Cobalt 60 and other Radiation Sources in Treatment
Robert E. Kasper, Minneapolis
Questions and Answers

7:00 ANNUAL BANQUET....Hall of States, Leamington Hotel
Outstanding entertainment, floor show and dancing.
Presentations:
Fifty Club Certificates
Southern Minnesota Medical Association Medal
Distinguished Service Award

asthma attack averted
. . . in minutes

patient protected
. . . for hours

Nephenalin®

(the dual-action anti-asthmatic tablet)

. . . works with nebulizer speed—provides four-hour protection

One Nephenalin tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.
Dosage: Hold one Nephenalin tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.
Supplied: Bottles of 50 tablets. For children: Nephenalin Pediatric, bottles of 50 tablets.
Caution: Do not administer Nephenalin with epinephrine. The two medications may be alternated at 4-hour intervals. Nephenalin should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. Thos. Leeming & Co., Inc., New York 17, N.Y.

Wednesday

MINNEAPOLIS AUDITORIUM

Chairman: A. E. Ritt

A.M. Visit Scientific and Technical Exhibits

9:00 SYMPOSIUM ON PSYCHIATRIC PROBLEMS

Moderator—Howard P. Rome, Rochester

Treating the "Nervous" Patient

Richard W. Anderson, Minneapolis

Management of the Acutely Disturbed Patient

William W. Jepson, Minneapolis

Behavior Problems Among Teenagers

H. S. Lippman, St. Paul

Questions and Answers

10:15 Intermission

Visit Scientific and Technical Exhibits

11:00 SYMPOSIUM ON FALLOUT — FACT OR FANCY?

Moderator—Einer W. Johnson, Jr., Rochester

Fallout—A. L. Orvis, Ph.D., Rochester

Radiation Sickness

Gerald M. McDonnel, U. C. L. A. Medical School, Los Angeles; *Russell D. Carman Memorial Lecture (Sponsored by the Minnesota Radiological Society)*

Shelters—Mass and Private

Mr. Odean Erickson, Mayo Clinic, Rochester

Questions and Answers

Special Events

SPORTS EVENTS

SUNDAY, MAY 20

GENERAL INFORMATION: Participants in sports events, their wives and all who attend the Annual Meeting are invited to attend a dinner at 6:30 p.m. at the Oak Ridge Country Club, Hopkins.

GOLF TOURNAMENT

Place: Oak Ridge Country Club, Hopkins
Tee-off Time: 10:30 a.m. to 1:00 p.m.—Sunday
Prizes will be awarded. Modest charge for dinner and green fees.

SKEET AND TRAP EVENTS

Place: Twin City-Hopkins Gun Club. Located at Highway 5 and County Road 4. (See map.)
Time: 11:00 a.m. to 4:00 p.m.—Sunday
Events: Skeet 50; Trap 50; Razzle Dazzle 25; Champion of Champions race.
Prizes: Trophies and prizes will be awarded.

SUNDAY, MAY 20

New Members, County Officers, and Delegates Dinner

6:00 P.M.—Minnesota Room, Leamington Hotel

Sports Events Dinner

6:30 P.M.—Oak Ridge Country Club, Hopkins. All physicians and their wives are cordially invited to attend the dinner for sports participants.

MONDAY, MAY 21

Minnesota Chapter, American College of Chest Physicians

6:30 P.M.—Dinner preceded by social hour at 6:00 P.M., Hotel Leamington. Panel on Management of the Cardiopulmonary Cripple. Tickets are $6.50, gratuity included.

Minnesota Academy of General Practice

6:30 P.M.—Banquet — Hall of States, Leamington Hotel, preceded by social hour in Hall of Presidents beginning at 5:30 P.M. Tickets to the banquet are $6.00, gratuity included. An entertaining speaker will be featured.

Fireside Conferences

8:30 P.M.—Hall of States, Leamington Hotel. Ten round table conferences on cardiorespiratory diseases arranged by the Minnesota Chapter, American College of Chest Physicians and the Minnesota State Medical Association. (Refreshments)

TUESDAY, MAY 22

Medical Women's Association

12:15 P.M.—Luncheon—Leamington Hotel, President Washington Room "B." Speaker will be Dr. Joseph Mestinghausen, University Foreign Student Adviser. Price $3.50, including gratuity. All women physicians welcome. Please contact Dr. Barbara Subak, 732 Chicago Avenue, Minneapolis, Federal 3-2321, for advance reservations.

Minnesota Academy of Ophthalmology and Otolaryngology

12:30 P.M.—Luncheon—Leamington Hotel, Jefferson Room. Following luncheon, the Academy will divide into two groups — Ophthalmologists to hear Herbert E. Kaufman, University of Florida Medical School, on "Herpes Simplex of the Cornea"; Otolaryngologists to hear William G. Hemenway, University of Chicago.

Minnesota State Medical Association

7:00 P.M.—Annual Banquet — Hall of States, Leamington Hotel. Tickets are $6.50 including gratuity. Floor show and dancing.

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WEDNESDAY, MAY 23
Minnesota Chapter, American Academy of Pediatrics

12:30 P.M.—Spring luncheon meeting—President Jackson Room, Leamington Hotel.

Minnesota Radiological Society

6:30 P.M.—Dinner—Minneapolis Club, preceded by social hour at 5:30. Speaker: Gerald M. McDonnel, Los Angeles, "Radiology Inside Russia — Personal Experiences."

Demonstrations

MINNEAPOLIS AUDITORIUM

Demonstration on Rehabilitative Nursing Techniques

Monday ....9:15 A.M.; 12:00; 1:00 P.M.; 3:15 P.M.
Tuesday ....10:15 A.M.; 12:00; 1:00 P.M.; 2:15 P.M.
Wednesday ....10:15 A.M.

Sponsored jointly by the Kenny Rehabilitation Institute and the Minnesota Department of Health.

Obstetric Manikin Demonstration — Immediate Postpartum Emergencies

Tuesday ....3:15 P.M. to 4:00 P.M.

Frederick J. Hofmeister, Milwaukee, Wisconsin — Consultant. Sponsored jointly by the Committee on Maternal Health of the Minnesota State Medical Association and the Minnesota Department of Health.

Round Table Luncheons

LEAMINGTON HOTEL

MONDAY
12:15 P.M.

Early Diagnosis of Diabetes Mellitus and the Importance of Early Treatment ....President Wilson Room
Wyman E. Jacobson, Minneapolis, and L. O. Underdahl, Rochester

The Selective Use of Tranquilizing and Antidepressive Drugs ....President Jackson Room
Burtrum C. Schiele, Minneapolis

Use and Abuse of Steroids ......President Lincoln Room
Asher A. White, Minneapolis, and Paul J. Bilka, Minneapolis

Which Ulcers Should Have Surgery? President Roosevelt Room
Martin A. Adson, Rochester, and Lyle J. Hay, Minneapolis

Hearing Loss in General Medicine President Taft Room
Jerome A. Hilger, St. Paul

TUESDAY
12:15 P.M.

Prolonged Labor ....President Lincoln Room
Frederick J. Hofmeister — Associate Clinical Professor, Department of Obstetrics and Gynecology, Milwaukee Hospital and Marquette University, Milwaukee, Wisconsin

Recent Trends in Antibiotics ....President Taft Room
Wesley W. Spink, Minneapolis, and William J. Martin, Rochester

Office Dermatology ....President Roosevelt Room
Elmer T. Ceder, Minneapolis, and Carl W. Laymon, Minneapolis

Emergency Tracheotomy ....President Wilson Room
Robert E. Priest, Minneapolis, and Robert J. Richardson, Minneapolis

Announcements

* **Register and Secure Your Badge** at the registration desk, Minneapolis Auditorium, on Monday from 9:00 a.m. to 5:15 p.m.; Tuesday, from 8:45 a.m. to 5:15 p.m.; Wednesday, 8:45 a.m. to 12:00 noon. Please wear your badge while you are on the convention floor. No registration fee for those who present a membership card or receipt or other evidence of membership from their county or state association or the American Medical Association.

* **Telephone Service:** Registration desk, Minneapolis Auditorium — **336-1373.** For those at business sessions, breakfasts or luncheons at the Leamington Hotel, call our Headquarters Office — **338-6053** (direct line).

* **Reservations for Round Table Luncheons.** Tickets should be purchased in advance for these luncheons (5 on Monday and 4 on Tuesday); please complete and return the enclosed reservation card. Tickets may also be purchased at the registration desk at the Minneapolis Auditorium. Latecomers are accommodated according to their choice, if luncheon limits have not already been reached. If any tickets remain unsold by approximately 11:30 a.m. the day of the luncheon, they can be purchased in the lobby of the Leamington Hotel. Tickets $3.25, gratuity included.

* **Annual Banquet** — Hall of States, Leamington Hotel, 7:00 p.m. on Tuesday. Outstanding entertainment — floor show and dancing. Formal dress is not required. Fifty Club candidates will be honored guests, and a medal for the outstanding scientific exhibit will be presented by the Southern Minnesota Medical Association. Tickets should be purchased in advance by using the enclosed reservation card, or they may be secured at the registration desk at the Minneapolis Auditorium. Tickets, $6.50, gratuity included.

* **Visit the Exhibits.** Visit the scientific and technical exhibits at the Minneapolis Auditorium. You are urged to show your appreciation to the technical exhibitors who have helped to make this meeting possible.

* **Woman's Auxiliary.** Physicians' wives who attend the meeting may secure Woman's Auxiliary programs at the Auxiliary registration desk, Solarium lobby of the Curtis Hotel.

Relieves Anxiety and Anxious Depression

The outstanding effectiveness and safety with which Miltown relieves anxiety and anxious depression—the type of depression in which either tension or nervousness or insomnia is a prominent symptom — has been clinically authenticated time and again during the past six years. This, undoubtedly, is one reason why physicians still prescribe meprobamate more often than any other tranquilizer in the world.

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meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS® — 400 mg. unmarked, coated tablets; and in sustained-release capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

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Clinically proven in over 750 published studies

1 Acts dependably — without causing ataxia or altering sexual function

2 Does not produce Parkinson-like symptoms, liver damage or agranulocytosis

3 Does not muddle the mind or affect normal behavior

Medicine IN WRIGHT COUNTY, Part IV

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

David A. S. Britts, (his last name appears in various forms). He was born in Montgomery County, Indiana March 1, 1844. After living for quite some time in Wisconsin he came to Dodge County, Minnesota in 1862 with his parents. He enlisted and served in the Mounted Rangers and with Company K of the 2nd Minnesota Cavalry. He participated during the Indian uprising and the Civil War from 1862 to 1866. Then he took up the study of medicine, graduating from the Chicago Medical College. He began his medical practice in the summer of 1875 at Marion, Olmsted County,* and later, in 1876, moved to Brownsdale, Mower County.** From there he went to Clearwater, Wright County in 1880, or a little later. He left no particular imprint in Wright County and nothing more is known of him, except that after some time he moved to Minneapolis where he was listed from 1902 through 1914. He was licensed in Minnesota by exemption in 1887.

Resolve O. Cady came to Buffalo in 1862. In 1885 it was recalled† that Dr. Cady had come twenty-three years previously when the village consisted of only three houses. He had traveled overland from Missouri.

Dr. Cady was born in Dublin, Ireland October 8, 1819 and came to the United States with his parents in 1827. He graduated from the Geneva Medical College, New York in 1884. He served in the Civil War but is not known in what capacity and for how long. He received his license December 28, 1883 when the medical practice act went into effect. Dr. Cady was a general practitioner of the old school and dressed as such with a high hat and a Prince Albert coat. He remained in Buffalo until his death.

In a country that was rather sparcely settled, practice had to extend over a wide area and the few newspapers had to be used to acquaint people with the practitioners in their county. Advertising, therefore, was accepted as the proper way of accomplishing that. Dr. Cady made much use of it and we find his name regularly in the Wright County papers. Early in 1871 he took "pleasure in informing the afflicted of Wright County that he is now prepared to treat cases of Prolapsus, Retroversion and Anteversion. He has on hand Dr. Babcock's Silver Uterine Supporter . . ."‡

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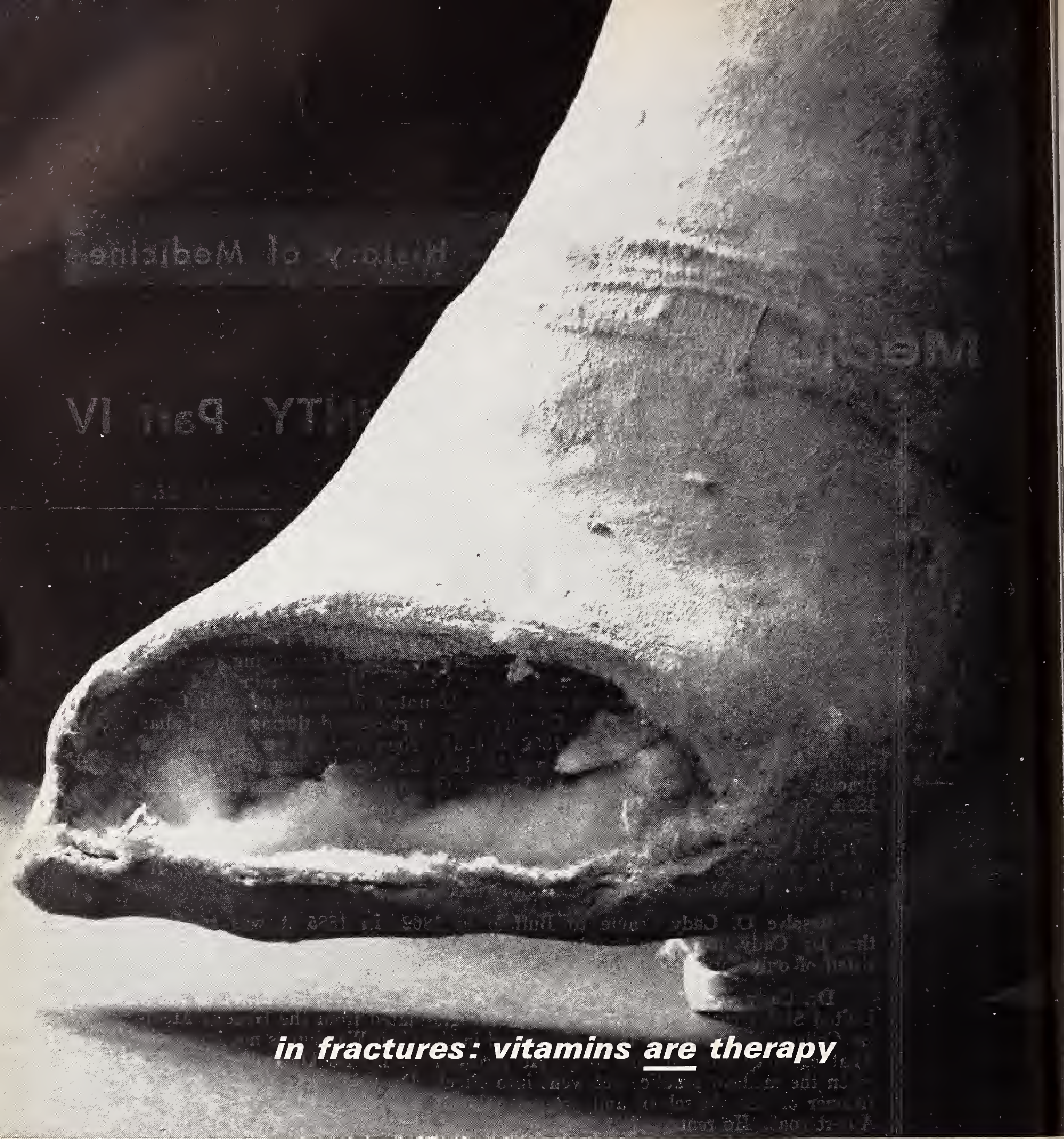
*"Medicine and its Practitioners in Olmsted County prior to 1900" by Nora H. Guthrey, **Minnesota Medicine**, 1949-1950.

"Medicine and its Practitioners in Mower County prior to 1900" by Nora H. Guthrey, **Minnesota Medicine July-Dec. 1960.

†**The Wright County Eagle**, June 18, 1885.

‡**The Northern Statesman**, February 4th, 1871.

Continued



Few factors are more fundamental to tissue and bone healing than nutrition. Therapeutic allowances of B and C vitamins are important for rapid replenishment of vitamin reserves which may be depleted by the stress of fractures. Metabolic support with STRESSCAPS is a useful adjunct to an uneventful recovery. Supplied in decorative "reminder" jars of 30 and 100.

Each capsule contains:	
Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

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STRESSCAPS®

Stress Formula Vitamins Lederle

The many reports about him in the newspapers are indicative of his medical acuity and his surgical skill. In 1879 he performed a difficult and delicate operation to remove a bullet which had lodged near the kidney of the patient six years previously. The patient who had convulsions improved after the operation. # In the same year he and Dr. Gibbs were given credit for the "miraculous recovery" of a little girl with "membranous croup"; she had been given up, but the unremitting attention, day and night, by these physicians saved her. ## In 1880 another successful difficult operation, the removal of a tumor from a knee, is reported.*

In 1881 he formed a partnership with Dr. S. E. Dean. Their professional card read:

"R. O. Cady, M. D. S. E. Dean, M. D.

Drs. Cady and Dean
Physicians and Surgeons

Having associated themselves for the practice of medicine and surgery are prepared to answer all professional calls by day and night. Office at the Drugstore opposite the court house, Buffalo, Minnesota." **

This was probably the same office he moved into in July, 1881 with his store of drugs and medicines in the Cronk and Meyer's Building on Courthouse Avenue, near Putman's store, nearly opposite the Court House. Dr. Cady's large practice made the assistant necessary. In 1877 he had opened a drugstore in Buffalo which he put in charge of his son, Victor; this store existed for many years. In January, 1884 a man dropped dead in this drugstore.

In 1881 Dr. Cady was appointed Medical Examiner for pension applicants for the district which included Wright County. † In May, 1882 he was given credit for the very early diagnosis in an outbreak of smallpox. In 1884 he was a member of the Crow River Valley Medical Society which was then barely a year old. He was a charter member when it was reorganized as the Wright County Medical Society August 1, 1894, and at this meeting he was elected president. He continued to be active in the society.

His life was a long one and full of activity and service, appreciated as it can be only in a community of pioneers. He was well liked and had success in his practice. Dr. Cady had many friends, and there are many stories of his activities and his eccentricities. He was active physically, too, and enjoyed deer hunting and fishing in the surrounding forests. One story made the rounds for a long time. He had ordered a local painter to paint a buck on the back of his shiny, new cutter, which he used on his trips through the countryside. According to the *Wright County Times* of December 27, 1873, "his directions were strictly complied with; but now the doctor carries his gun with him wherever he goes, and they do say he is looking for that miserable painter whose name is Andrew Bertram. The buck that he painted on was a sawbuck." His cronies had the laugh on him, a fact that was too good to be omitted by the newspaper (1/3/1874): "Dr. Cady was in town in his new cutter a week ago. he was asked by everyone he met when he could come and saw some wood. When Andrew Bertram heard he was in town he went over to Sherburne County to see somebody."

It is not known how long the partnership with Dr. Dean lasted. In 1886 there was only one other physician in Buffalo, Dr. F. O. Francis, and in 1890 Buffalo had three physicians — Drs. Cady, Barton and Meyer. In 1887 a planned partnership with Dr. B. L. Brigham was announced, but is not clear whether or not it was actually established.

As mentioned, he was active in many ways. He still had the drugstore in 1887; he owned a farm (as early as 1882) and in 1886 Dr. Cady was "said to own the best trotting nag in the county." ‡

#**The Wright County Eagle**, July 24, 1879.
##**The Wright County Eagle**, Dec. 11, 1879.
***The Wright County Eagle**, June 17, 1880.
****The Wright County Eagle**, April 14, 1881.
†**The Wright County Eagle**, July 7, 1881.
‡**The Wright County Eagle**, May 13, 1886.
***The Wright County Eagle**, June 18, 1885.

Continued

a relaxed mind in a relaxed body

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Trancopal®

Brand of chlormezanone

effective TRANQUILIZER ■ potent MUSCLE RELAXANT

When you prescribe Trancopal you can see how this "tranquilaxant" speedily helps the anxious patient. It quiets his psyche — and this quieting helps relax tense muscles. It eases muscle spasm — and this easing helps put the mind at rest.

DeNyse[1] notes that the effect of Trancopal as a quieting agent ". . . may play a part in the skeletal muscle relaxing results obtained." Gruenberg[2] used Trancopal to treat patients with musculoskeletal disorders, and commented: "In addition to relieving spasm and pain, with subsequent improvement in movement and function, Trancopal reduced restlessness and irritability in a number of patients."

Trancopal has an unsurpassed record of safety. Very few side effects occur with Trancopal. You may see them in only about two out of a hundred patients, and they will almost always be mild.

Available: 200 mg. Caplets® (green colored, scored), bottles of 100
100 mg. Caplets (peach colored, scored), bottles of 100

Dosage: Adults, 1 Caplet (200 mg.) three or four times daily;
children (5 to 12 years), from 50 to 100 mg. three or four times daily.

Before prescribing, consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

References: 1. DeNyse, D. L.: M. Times 87:1512 (Nov.) 1959.
2. Gruenberg, F.: Current Therap. Res. 2:1 (Jan.) 1960.

Winthrop LABORATORIES New York 18, N.Y.

1642M

Dr. Cady was married. His wife's name must have been Smith as in 1885 a news item tells that "the Cady boys came into a little money from their grandfather, Mr. John Smith, who died two years ago in Illinois, Lake County, and whose estate was just settled." * They had at least four children, one daughter and 3 sons; Victor ran the drugstore for some time, Hector worked for the Monticello and Puget Sound Railroad. One son died at 32, January 6, leaving a wife and a six year old child.

In 1887, when he was sixty-seven, Dr. Cady must have felt tired as he talked of retiring, but he continued his practice for many years. In 1893 Dr. Barton was the second physician listed in Buffalo and 1896 and 1898 Dr. Shannon practiced there besides Dr. Cady. In 1900 Dr. Cady is no longer listed. As far as could be ascertained, he died in 1901.

Henry E. Cassell (in earlier years known as **Karl Henry E. Cassell**) received his medical and surgical education in his native Sweden and graduated from the University of Minnesota Medical School in 1883. The A.M.A. reports that he was also licensed in Illinois (1881). He received his Minnesota license December 31, 1883 by exemption. He was director and chief surgeon of the Litchfield hospital in later years. He located at Dassel, Meeker County, in 1888, and was listed in Cokato from 1890** through 1896. In 1893 he apparently was the only physician in Cokato. He was regarded by those who knew him as an exceptionally skillful surgeon. He died at the Luther Hospital in St. Paul April 4, 1911 from septicaemia caused by an operation wound, at the age of fifty-one years. His address at the time was Litchfield and he was buried in that town. Besides being a competent and successful surgeon, he leaves a legend as being an enormous man of over 300 pounds, and a tremendous eater, especially of steaks, of which he could put away an unbelievable number at one meal. His record at the table fully equaled his reputation as a surgeon. He was a member of the American Medical Association. †

Norman W. Chance, practiced in Cokato in the late 1880's. It seems he started to practice before he had a medical degree. He took a winter course at Rush Medical College in the winter of 1886/87, and returned to Chicago to complete his studies at Rush in the fall of that year. Although he did not graduate until 1888 he apparently was on the way to a good practice by spring of that year. "Dr. Chance seems to be working up quite a practice and looks prosperous when he makes his morning visits" states a news-item of April 19, 1888. Soon he became interested in politics and, as a staunch Republican, was elected Republican Alternate of Cokato to the National Convention (1888).

He is supposed to have come to Cokato from Delano where his parents had lived. He was licensed on October 11, 1898.

Perry Chance, was one of the early pioneer physicians of Wright County. He came to Delano in 1869 and died there November 19, 1871. He was born in Alliance, Ohio on September 8, 1834 and graduated from the Charity Hospital Medical College, Cleveland, Ohio, in February, 1868. He was elected to membership in the State Medical Society. * He was survived by his widow and five children. There is no information as to whether or not he was related to Dr. Norman W. Chance.

**According to one report, Dr. Cassell located in Cokato in 1887. If this is correct, he must have left Cokato and returned about 1890.

†See the biographical sketch of Dr. Cassell in "Medical Men of Meeker County to 1900" by Dr. Harold E. Wilmot (privately printed, Litchfield 1956) pp. 60-62, and **Minnesota Medicine** 1958-59.

*Transactions, Minnesota State Medical Society, 1872.

(To Be Continued)

ENDOCRINE AND PHARMACEUTICAL PRODUCTS OF QUALITY

Organon

An important announcement to physicians who prescribe corticosteroids

Organon's new technical process now makes one of the newer, most highly potent and well tolerated corticosteroids available at greatly reduced cost to your patients with allergic, arthritic or other inflammatory conditions.

This new product is being marketed under the trade name of HEXADROL, brand of dexamethasone 'Organon'. HEXADROL is now being offered to your pharmacist at a price which should make it available to your patients at a cost well within the price range of older generically prescribed corticosteroids. It is supplied as 0.75 mg. white scored tablets, in bottles of 100.

If you have been prescribing the older corticosteroids— such as prednisone, prednisolone, hydrocortisone or cortisone, and have hesitated to prescribe the newer corticosteroids because of economic consideration for your patients, you can now secure all of the clinical advantages of dexamethasone at approximately the same prescription expense. Mg. for mg., HEXADROL is approximately 6 times more potent than triamcinolone or methylprednisolone...8 times more potent than prednisone or prednisolone...28 times more potent than hydrocortisone...and 35 times more potent than cortisone.

If you are now prescribing the newer corticosteroids— such as triamcinolone, betamethasone, paramethasone or another brand of dexamethasone, because of reduced risk of sodium and fluid retention, potassium depletion, or disturbance of glucose metabolism—you can obtain all of these benefits with HEXADROL, at marked savings—yet with complete assurance of unsurpassed quality and therapeutic effect.

For complete information concerning HEXADROL— including indications, dosage, precautions and side effects—or if you would like a trial supply, ask your Organon Representative, or write to: Director, Professional Services, Organon Inc., West Orange, N. J.

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Hexadrol®—your patient's assurance of economy!

Medical Economics

WHY WE DON'T NEED H.R. 4222, THE KING BILL, IN OUR STATE

The citizens of Minnesota enjoy the finest health care of any group of people anywhere. The fundamental reason for this is inherent in the system they enjoy - the absence of coercion by government.

Minnesota has a reputation for solving its own problems and its citizenry feel that it is their right and responsibility to chart their own course in a harmonious manner through individual initiative and local self-government.

There is no need for H. R. 4222, 87th Congress, the King Bill, in Minnesota. Here are the **Facts:**

1. According to the 1960 census, the aged population (65 and over) of Minnesota is 354,351 persons; this is 10.4% of the total population.
2. Of these, 13.7% are indigent and on the Old Age Assistance Rolls in the state (approximately 1.3% of the total population), and only 7% (or less than 1% of the total population) are medically indigent.
3. 34% of the aged are not receiving Social Security benefits and most all of these would not be eligible for benefits under the King Bill.
4. In a study conducted at the University of Minnesota, to determine the attitudes, characteristics and status of persons over 65 in Minnesota, it was found:
   - — One-half of those interviewed had a net worth over $10,000. (The report comments that one's financial well being after age 65 is often more dependent on net worth than on current earnings.)
   - — Only 16% of those interviewed said that their means were not enough to live on.
   - — 87% said they had no uncared for needs and only 5% said that their medical needs had not been met because of the expense involved.
   - — 95% had spent less than $500 for medical care the preceding year and 25% had spent less than $50.
   - — About 60% (71% in the metropolitan areas) had some type of hospital insurance, most of them having purchased the coverage when over 50 years of age. The percentage of aged insured for medical costs increases each year.
5. In a study of hospitalized patients made in 1960 (Renville County Hospital in Olivia, Minnesota), covering patients 65 years or older, these results were had:
   - — The aged constituted only 21.5% of all admissions.
   - — Their total hospital bill averaged $350 with the median being $226.
   - — 75% used private resources to pay their bills.
   - — As of February 1, 1961, only 8.9% had not paid their hospital bill in full.
6. An examination of Minnesota's statistics on its aged, and a review of the foregoing hospital study and University of Minnesota study, leads to these conclusions:
   - — That less than 1% of our aged are medically indigent.
   - — That voluntary health insurance is available to the aged, with most of the aged covered and the number increasing daily.
   - — That most all of the aged are financially able to provide for their medical care, with the remainder covered

Continued

Emotional control regained... a family restored... thanks to a doctor and 'Thorazine'

During the past seven years, 'Thorazine' has become the treatment of choice for moderate to severe mental and emotional disturbances because it is:

- specific enough to relieve underlying fear and apprehension
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- flexible enough so that in severe cases dosage may be raised to two or three times the recommended starting level

Experience in over 14,000,000 Americans confirms the fact that, in most patients, the potential benefits of 'Thorazine' far outweigh its possible undesirable effects.

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in both office and hospital practice

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by existing Welfare programs.

— That there is **no** need for a compulsory federal health care program in Minnesota.

Meet the Pro-H. R. 4222 Physicians

The March 27 meeting between President Kennedy and 27 physicians in favor of H. R. 4222 had been anticipated, but does not bode well in the campaign to defeat the bill . . . The 27 physicians on the following day announced the formation of "The Physicians Committee for Health Care for the Aged through Social Security." . . .Dr. Caldwell B. Esselstyn, of HIP's Rip Van Winkle Clinic, Hudson, New York, who acted as spokesman for the MD's, said the committee would establish headquarters in Washington . . . Forty-two physicians signed a statement endorsing the compulsory social security approach to health care of the aged. Dr. Esselstyn read this statement to the President . . .

Following is a List of The Physicians Who Reportedly Signed the Statement Endorsing the Social Security Approach to Health Care of the Aged.

Dr. Robert H. Alway, Dean of the Stanford University School of Medicine.

Dr. George Baehr, Chairman of the New York State Public Health Council.

Dr. Walter Bauer, Chief of Medical Service, Massachusetts General Hospital.

Dr. David Barr, Past President of the Health Insurance Plan of greater New York.

Dr. Leona Baumgartner, Commissioner of the New York City Department of Health.

Dr. E. Michael Bluestone, Adjunct Assistant Professor of Administrative Medicine, College of Physicians and Surgeons, Columbia University.

Dr. Katherine Boucot, Professor of Preventive Medicine, Women's Medical College, Philadelphia.

Dr. Thomas Brem, Professor of Medicine, University of Southern California.

Dr. Dewitt T. Burton, Director of Burton Hospital, Detroit.

Dr. Martin Cherkasky, Director of Montefiore Hospital, New York City.

Dr. Robert E. Cooke, Professor of Pediatrics and Director of the Department of Pediatrics at the Johns Hopkins School of Medicine, Baltimore.

Dr. Edward P. Crump, Associate Professor of Pediatrics, Meharry Medical College.

Dr. Michael E. De Bakey, Chief of the Department of Surgery, Baylor University College of Medicine, Houston.

Dr. James P. Dixon, Jr., President of Antioch College, Yellow Springs, Ohio.

Dr. Warren Fales Draper, Executive Medical Officer, United Mine Workers Welfare & Retirement Fund, Washington, D. C.

Dr. Benedict J. Duffy, Professor of Preventive Medicine & Community Health, Seton Hall College of Medicine, Jersey City, New Jersey.

Dr. Robert Ebert, Professor & Director of Medicine, School of Medicine, Western Reserve University, Cleveland.

Dr. Caldwell B. Esselstyn, Medical Director, The Rip Van Winkle Clinic, Hudson, New York.

Dr. Alfred Gellhorn, Professor of Medicine, College of Physicians and Surgeons, Columbia University.

Dr. Morton Goodman, Assistant Professor Clinical Medicine, University of Oregon.

Dr. James H. Graves, Associate Professor Psychiatry, Wayne State University College of Medicine, Detroit.

Dr. Sven M. Gunderson, Clinical Professor of Medicine, Dartmouth School of Medicine.

Dr. Thomas Hunter, Dean, University of Virginia Medical School.

Dr. R. Frank Jones, Medical Director of Freedmen's Hospital, Washington, D .C.

Dr. Arthur Kornberg, Professor & Executive Head of the Department of Biochemistry, Stanford University.

Dr. Lawrence S. Kuble, Director of Training at Sheppard-Enoch Pratt Hospital, Towson, Maryland.

Dr. Phillip R. Lee, Department of Internal Medicine, Palo Alto Clinic.

Dr. Irving M. London, Professor of Medicine at the Albert Einstein College of Medicine, New York.

Dr. J. Howard Means, Professor Emeritus of Medicine at Harvard Medical School.

Dr. Daniel R. Mishell, Chief Gynecologist, Beverly Hills Doctors Hospital.

Dr. Frederick D. Mott, Executive Director of the Community Health Associations, Detroit.

Dr. George Reader, Professor of Preventive Medicine at the Cornell Medical School.

Dr. Dickinson W. Richards, Lambert Professor of Medicine, College of Physicians and Surgeons, Columbia University.

Continued

Put your low-back patient back on the payroll

Soma relieves stiffness —stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, *fast!*

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

This was demonstrated by Kestler in a controlled study: average time for full recovery was 11.5 days with Soma, 41 days without Soma. (J.A.M.A. **172**:2039, April 30, 1960.)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. USUAL DOSAGE: 1 TABLET Q.I.D.

The muscle relaxant with an independent pain-relieving actio

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Dr. David E. Rogers, Professor of Medicine, Vanderbilt University School of Medicine.

Dr. David Rutstein, Professor of Preventive Medicine, Harvard University Medical School.

Dr. Ernest Saward, Physician-In-Chief, Bess Kaiser Hospital Foundation, Portland, Oregon.

Dr. William A. Sawyer, Lecturer, University of Rochester School of Medicine.

Dr. Benjamin Spock, Professor of Child Development at Western Reserve University.

Dr. Helen Taussig, Professor of Pediatrics, Johns Hopkins Medical School.

Dr. Ray E. Trussell, Commissioner of Hospitals, New York City.

Dr. Alonzo S. Yerby, Medical Welfare Administrator, New York City Department of Welfare & Executive Director of Medical Care Service, New York City.

Timetable Uncertain

Just when H. R. 4222 will come up for vote in Ways and Means is not known . . . The educated guess is the end of May or early in June . . . House Speaker John McCormack called for a July 1 adjournment of Congress but he will not have the final sayso . . . It is known that McCormack wants to get back to Massachusetts to campaign for his nephew who is running against young Ted Kennedy for the Democratic senatorial nomination. Other prominent Congressional leaders think the session could last until Labor Day.

Curtis Clarifies MD Support

Representative Thomas B. Curtis (R-Mo.) accused the Kennedy Administration recently of wrongly claiming new physician support for H. R. 4222 . . . Referring to the 42 physicians who signed a document supporting the compulsory social security approach, Curtis said: "One was the chairman of the platform committee on health at the 1960 Democratic National Convention. Seven of them testified before us at the Ways and Means Committee in support of the Kennedy plan. One organized a 'Committee of Physicians' for Kennedy during the 1960 Presidential campaign. Three are officials of 'citizens groups' which have been in the forefront of the lobbying campaign for H. R. 4222. Three are employed by international unions. Two are New York employees of Mayor Wagner . . . and one is director of a hospital supported entirely by government funds." . . . Curtis said the "new committee" for the President's proposal are all "old faces, many of whom have long been identified" with it.

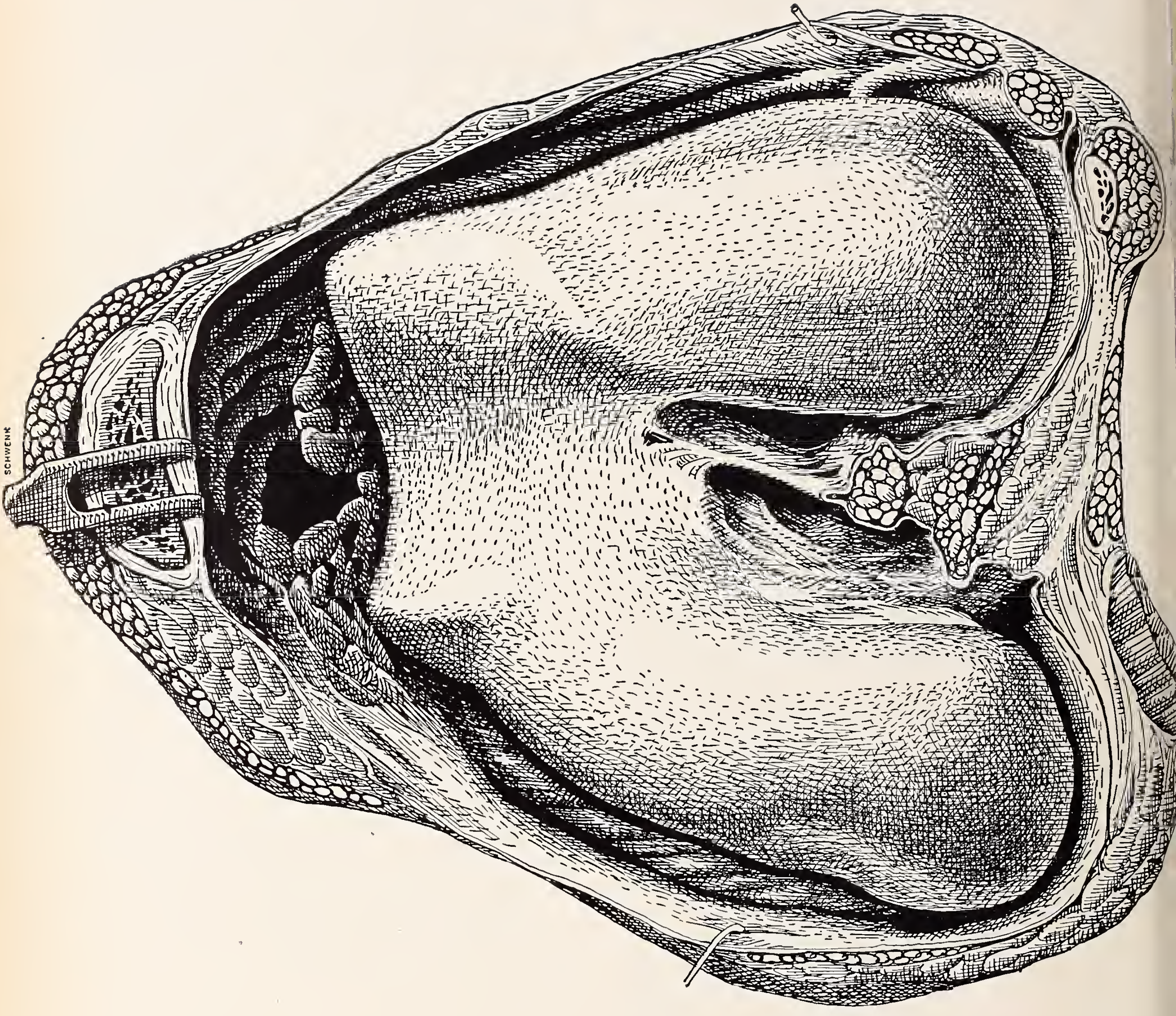
Gallup Poll Shows Rising Opposition To Social Security Eldercare

Doctor Edward R. Annis said on April 14 that "the most recent Gallup Poll confirms the fact that there is a rising tide of sentiment against the Administration proposal for financing medical care for the aged through an increase in social security taxes." . . . In a speech before the Tufts Medical School Alumni Association, Dr. Annis said reports of the Gallup Poll released April 1 showed that 55% of the people favored the social security approach . . . "But 10 months ago," he continued, "the Gallup Poll reported 67% in favor. This is a substantial shift in sentiment away from the Administration position. It is clear that the Administration is losing ground with the people because more and more of them, millions more, are understanding what this proposal really would do." . . . Dr. Annis emphasized that if the Gallup Poll questions would reflect the basic issues better, the results would show the vast majority of the people would oppose the plan.

ANSWER'S TO WHAT'S YOUR DIAGNOSIS

(From Page 494)

The needle biopsy and a subsequent Whipple resection on November 13, 1961 revealed a neurofibrosarcoma arising from the wall of the duodenum. This had compressed the duodenum to account for the obstruction and the bleeding. The patient had a stormy second postoperative convalescence but now appears to be recovering from the disease.



because patients are more than arthritic joints…
controlling inflammatory symptoms is frequently not enough!

Even cortisone, with its severe hormonal reactions, can effectively control inflammatory and rheumatoid symptoms. But a patient is more than the sum of his parts – and the joint is only part of a whole patient. Symptomatic control is but one aspect of modern corticotherapy, because what is good for the symptom may also be bad for the patient.

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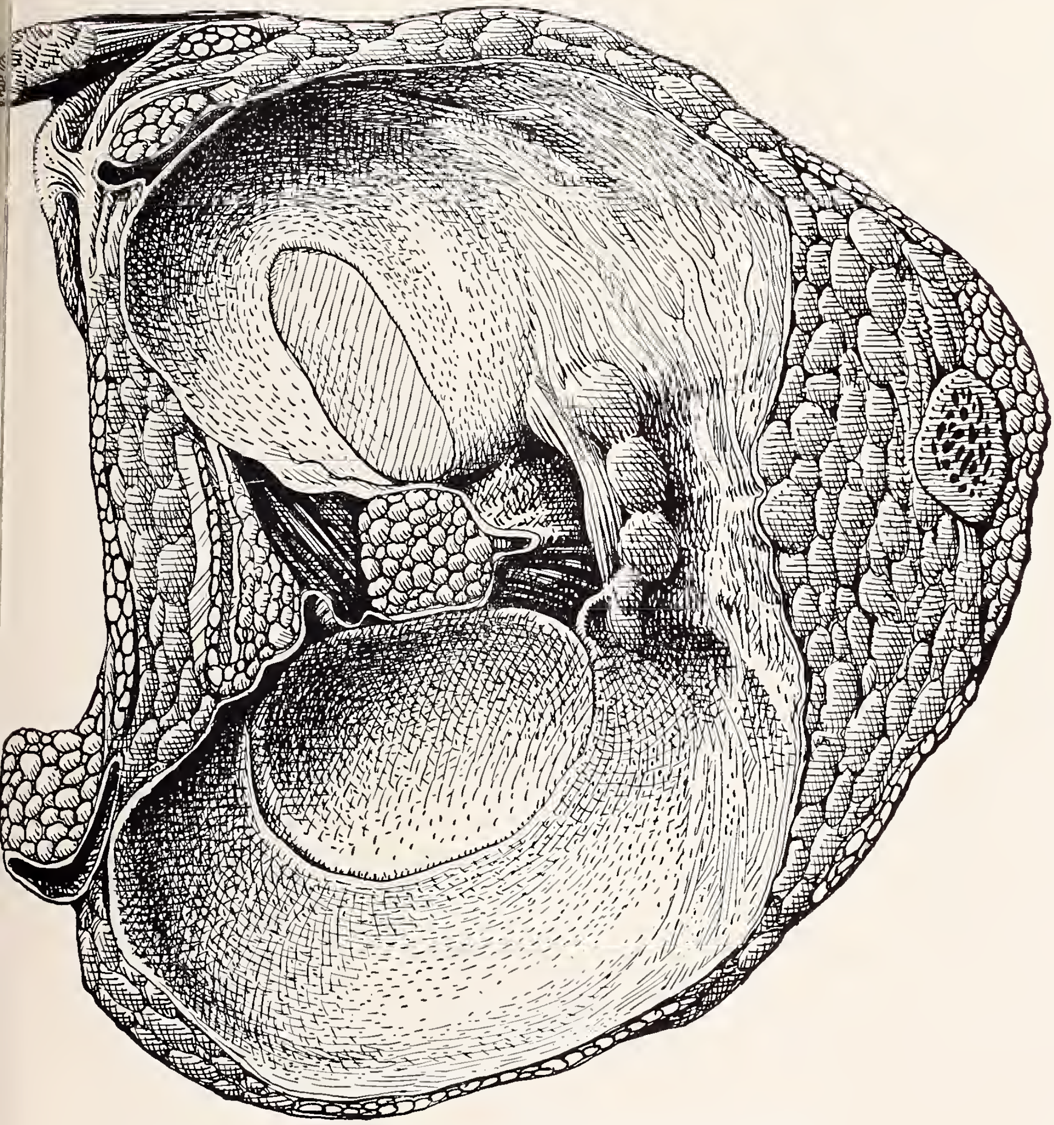

(Knee Joint, Left: distal end of femur; Right: proximal end of tibia)

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Meetings and Announcements

MAY

Minnesota State Medical Association 109 Annual Meeting, Minneapolis Auditorium, May 21-23. Contact: Harold Brunn, Exec. Secy.

American Rhinologic Society Course on "Expanded Surgery of Nasal Septum" at St. Michael Hospital, Milwaukee, May 16-19. Contact: Rhinologic Society, Chicago.

University of Colorado Medical Center 10th Annual Western Cardiac Conference in Denver May 28, 29, 30. Contact: Office of Postgraduate Medical Education.

First Annual Convention of American Association for Contamination Control May 28-30—Jack Tar Hotel, San Francisco. Contact: Donald M. Petersen, Central Vacuum Corporation, 3008 E. Olympic Blvd., Los Angeles 23, Calif.

JUNE

American Medical Association 111th Annual Meeting, McCormick Place, Chicago. June 24-28. Contact: AMA, Chicago.

American Association for the Study of Headache, Annual Meeting, June 23, Palmer House, Chicago. Contact: Dr. Bayard Horton, Mayo Clinic, Rochester.

Medical Library Association Annual Meeting, June 4-8, Sheraton-Chicago Hotel, Chicago. Contact: Donald Washburn, D.D.S., 222 E. Superior St., Chicago.

American College of Chest Physicians Annual Meeting, Chicago, June 21-25, Morrison Hotel. Contact: Murray Kornfeld, College of Chest Physicians, Chicago.

American College of Physicians Course, "Psychiatry for the Internist," June 4-8, The Psychiatric Institute, University of Maryland School of Medicine, Baltimore. Contact College of Physicians, Philadelphia.

Medical Library Association is offering a Medical Librarianship Course at Emory University, Atlanta, June 18-July 27. Contact: Medical Library Association, Chicago. Also a course entitled "Bibliography of the Biomedical and Physical Sciences" will be offered at the University of Southern California, Los Angeles, June 25-August 3.

10th Annual National Conference on Disaster Medical Care in Chicago, June 23. Contact: Department of National Security, AMA, Chicago.

American Medical Women's Association brunch June 23, 11:00 A.M. at the Essex Inn, Chicago. Contact: Association in New York.

Wisconsin Society of Pathologists Summer Meeting at Eagle Waters Resort in Eagle River, Wisconsin June 15-16. Contact: Dr. David Carlson, Milwaukee Hospital, Milwaukee, Wisconsin.

JULY

University of Colorado School of Medicine Conference on "The Management and Rehabilitation of Patients with Arthritis" July 5-7 in Denver. Contact: the University.

American College of Chest Physicians postgraduate course "Cardiopulmonary Problems in Children," in Chicago, Edgewater Beach Hotel, July 23-27. Contact: Murray Kornfeld, Executive Director, Chicago.

Eighth International Cancer Congress July 22-28, in Moscow. Contact: American Tourist Bureau, 30 W. Washington St., Chicago.

Chicago Diabetes Association Summer Camp for diabetic children July 15-August 5, at Holiday Home, Lake Geneva, Wisconsin. Contact: Chicago Diabetes Association, 620 North Michigan Avenue, Chicago.

Summer Convention of the Colorado Ophthalmological Society, July 9-12, Estes Park, Colorado, the Stanley Hotel: Contact: Ophthalmological Society, 4200 E. 9th Avenue, Denver, Colorado.

16th Annual Rocky Mountain Cancer Conference, July 13-14, Brown Palace West Hotel. Contact: Rocky Mountain Cancer Conference, 1809 E. 18th Avenue, Denver.

ANNOUNCEMENTS

Applications for certification of the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination in Part II are now being accepted. Deadline date: July 1, 1962. Contact: Robert Faulkner, 2105 Adelbert Road, Cleveland.

Committee on scientific exhibits for the June meeting of Minnesota State Medical Society is desirous of receiving applications from persons or organizations interested in making an exhibit. Contact: Lyle J. Hay, M.D., 714 9th Avenue South, Minneapolis.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota; Ophthalmology; Proctology for General Physicians May 14-18; Psychiatry May 31-June 2.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

The American College of Chest Physicians has established a fund providing for loans to resident physicians to stimulate interest in postgraduate study of chest diseases and to assist students in continuation of studies in diseases of the chest. Any physician who has completed an internship of one year or more in an acceptable hospital may apply. Application forms may be secured from Committee on Resident Loan Fund, American College of Chest Physicians, 112 E. Chestnut Street, Chicago 11, Illinois.

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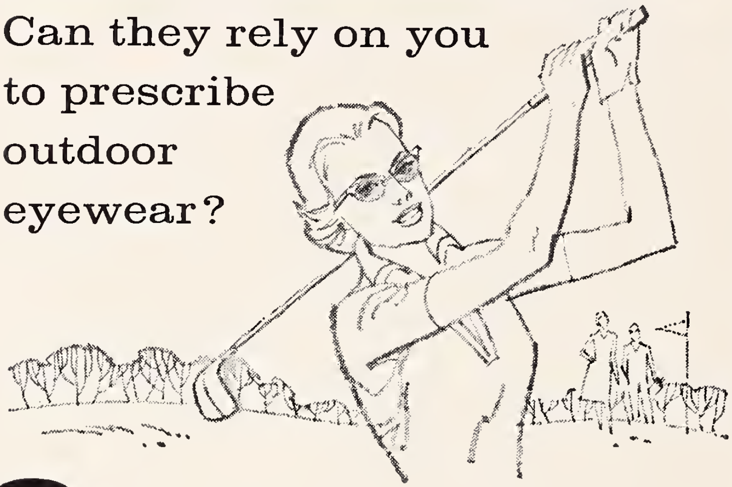
Can they rely on you to prescribe outdoor eyewear?



IF NOT, the alternative is clear. They'll be making impulse, spur-of-the-moment purchases from clerk-dispensed or self-serve racks and displays. Absent will be the important considerations of professional eye care, an up-to-date prescription, Rx-ground lenses, personal selection, proper fitting and continuing service. Give your patients the benefit of your *professional* service.

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Board of Medical Examiners

ST. PAUL WOMAN SENTENCED ON ABORTION CHARGE

Re: State of Minnesota - vs - Virginia Cavanaugh

On October 25, 1961 Virginia Cavanaugh, 35, 215 Sherburne Ave., St. Paul was sentenced for the crime of abortion by the Hon. Clayton Parks, Judge of the District Court of Ramsey County, to a term of not to exceed four years in the Reformatory for Women at Shakopee, Minnesota. Judge Parks then stayed the execution of the sentence for four years, however, and placed Mrs. Cavanaugh on probation for the same period of time, under the supervision of the Ramsey County Probation Office. A criminal complaint, which was signed by a representative of the Minnesota State Board of Medical Examiners, had been issued in the defendant's case by the Ramsey County Attorney's office on July 21, 1961. On September 27th, 1961, a plea of guilty to the abortion charge was entered by the defendant before Judge Parks, at which time the Court continued the matter for the purpose of a presentence investigation.

The case came to the attention of the authorities in July 1961 after a 22-year-old, unmarried Minneapolis woman had been hospitalized in a St. Louis Park Hospital suffering from the after-effects of an induced abortion. A joint investigation was then conducted by the Hennepin County Sheriff's office and the Minnesota State Board of Medical Examiners. However, when it was learned that the last of several attempts made by the defendant to perform the abortion had taken place in the City of St. Paul, the St. Paul Police Department also entered the case. According to a written statement given by the patient, the defendant was paid the sum of $600 in cash in a Minneapolis motel on June 2nd, 1961 immediately preceeding her first attempt to perform the abortion by means of inserting a catheter. Between June 2nd and June 29th, when the patient was hospitalized, Mrs. Cavanaugh made at least five attempts to cause the fetus to be expelled. The defendant was arrested at her home on July 19th, 1961.

The defendant, who does not have a previous criminal record, has no training in medicine nor does she hold a license to practice any form of healing in the State of Minnesota.

ABORTIONIST SENTENCED TO FOUR-YEAR PROBATIONARY TERM IN RAMSEY COURT DISTRICT COURT

Re: State of Minnesota - vs - Robert O. Reeves

On March 13th, 1962 Robert O. Reeves, 58, who has no permanent address but had been living with relatives in St. Paul, was sentenced for the crime of abortion by the Hon. John W. Graff, Judge of the District Court of Ramsey County, to a term of not to exceed four years in the State Prison at Stillwater, Minnesota. However, the Court then immediately stayed the execution of the sentence and placed Reeves on probation under the supervision of the Ramsey County Probation Officer for a period of four years. The defendant had entered a plea of guilty on February 19th, 1962 before Judge Graff to an information charging him with the crime of abortion.

A search for the defendant was begun by the authorities in December 1961 after a 20-year-old single woman, who was employed by a battery firm, was hospitalized at a St. Paul hospital suffering from the after-effects of an abortion. The woman disclosed that after learning that she was pregnant she contacted a friend who had once submitted to an abortion and arrangements were subsequently made by the friend over the telephone for the two of them to meet the defendant at a downtown St. Paul bar and cafe. The defendant then drove them to a house where he explained the procedure that he intended to follow. Reeves then gave the patient a hypodermic injection for pain, his claim being that the drug was novocain. After boiling a catheter and inserting it he also furnished quinine to the woman, which he instructed her to take every two hours, and he supplied her with a number of small white pills that she was directed to take in the event she should suffer a hemorrhage. The defendant was paid the sum of $250 for his services.

The defendant was not located until January 23rd, 1962, at which time he was arrested as he was coming out of the St. Paul Post Office. On January 25th, 1962 the Ramsey County Attorney's office issued a criminal complaint, which was signed by legal counsel for the Minnesota State Board of Medical Examiners, charging the defendant with the crime of abortion. Reeves demanded and was given a preliminary hearing in St. Paul Municipal Court but at the conclusion of the hearing he was bound over to the Ramsey County District Court for trial, where as stated above he entered a plea of guilty. The defendant, who has not been trained in medicine, holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secy.

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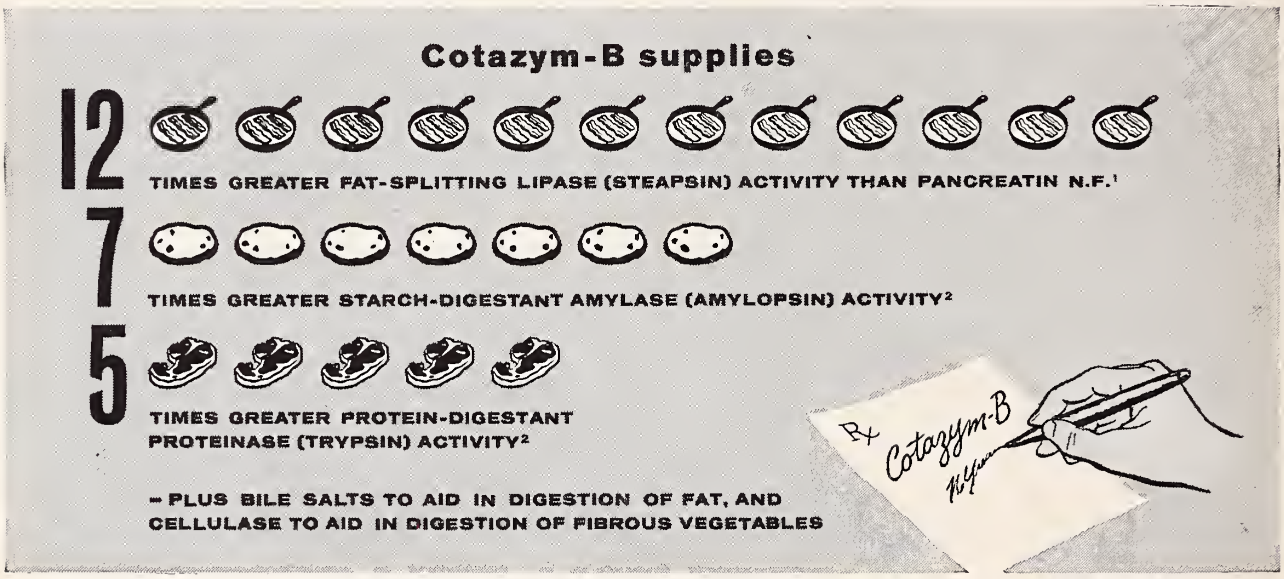

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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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In Memoriam

JOHN WALKER MacDONALD

Dr. John Walker MacDonald, 40, of Edina died March 27 at St. Barnabas Hospital. He was a native of Minneapolis and a graduate of the University of Minnesota.

He was a member of the Hennepin County Medical Society, Minnesota State Medical Association, and the American Medical Association. He was also a member of the state, national and international organizations of radiologists.

He is survived by his wife, a daughter, and two sons.

OSCAR T. KALIN

Dr. Oscar Theodore Kalin, 76, died April 11. He was born in Clay Center, Kansas and practiced in Minneapolis for many years. He was a graduate of the University of Kansas and received his doctor of medicine degree from the Rush Medical College, Chicago.

He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association, and the American Medical Association. Dr. Kalin was a staff member of the Swedish Hospital and a member of the American Academy of General Practice, Cataract Lodge No. 2, A. F. and A. M., Scottish Rite and Zuhrah Temple of the Shrine.

He is survived by his wife, two daughters, and a son.

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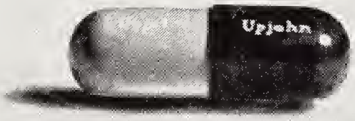

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Side Effects: Panmycin Phosphate is well tolerated clinically and has a very low order of toxicity comparable to that of the other tetracyclines. Side reactions are infrequent and consist principally of mild nausea and abdominal cramps.

Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

Urticaria and maculopapular dermatitis have been reported in a significant percentage of patients treated with Albamycin. Upon discontinuance of the drug, these skin reactions rapidly disappeared.

Warning: Since Albamycin possesses a significant index of sensitization, appropriate precautions should be taken in administering the drug. If allergic reactions develop during treatment and are not readily controlled by antihistaminic agents, use of the product should be discontinued.

Total and differential blood cell counts should be made routinely during the administration of Albamycin. If new infections appear during therapy, appropriate measures should be taken; constant observation of the patient is essential. If a yellow pigment appears in the plasma, administration of the drug should be continued only in urgent cases, and the patient's condition closely followed by frequent liver function tests. In case of the development of liver dysfunction, therapy with this agent should be stopped.

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Indications: Upper and lower urinary tract infections amenable to sulfas; prophylaxis in surgery, instrumentation, catheterization, urinary stasis, etc.

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*Rowell's brand of trisulfapyrimidines (equal amounts of sulfadiazine, sulfamerazine and sulfamethazine).

Side Effects and Contraindications: As with all sulfas, watch for crystalluria, though this is minimized by Ro-Sulfa formula. Discontinue if exanthemata, urticaria, fever, hematuria, etc., occur. Contraindicated in hypersensitivity to sulfas, chronic glomerulonephritis, pyelonephritis of pregnancy, hepatitis and uremia.

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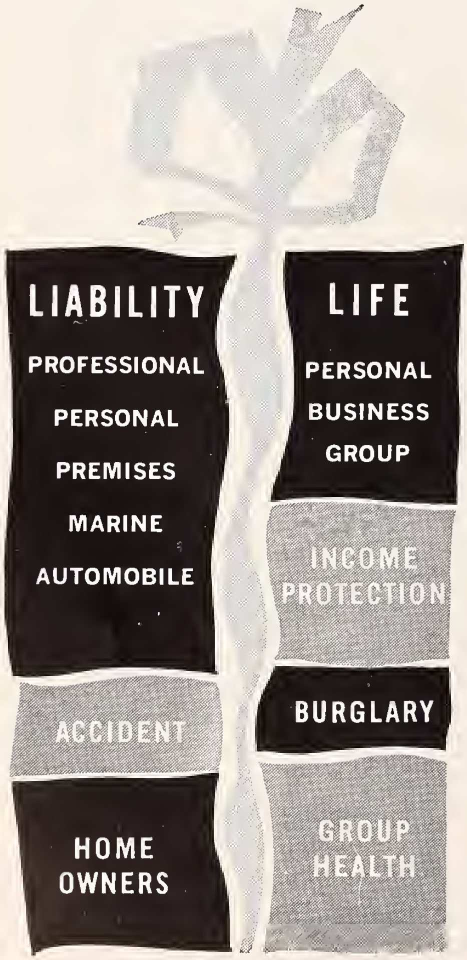
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Physician's Diary

DR. JESSE E. EDWARDS, chief pathologist at the Charles T. Miller hospital in St. Paul, delivered the Twenty-fourth Roger Morris Memorial Lecture at the University of Cincinnati in March.

* * *

DR. FERNANDO TORRES, University of Minnesota Hospitals, was one of the four doctors receiving grants from the Epilepsy Foundation of Washington, D. C. for research projects.

* * *

DR. ALBERT E. RITT of St. Paul was elected president of the American Academy of General Practice at the annual scientific assembly of the academy.

* * *

DR. GENE D. SHERRILL of Albert Lea has joined the Mankato Clinic as dermatologist. **DR. CLAIRE J. A. STROBEL** of the clinic spoke to the Central Surgical Society in Cincinnati recently, and **DRS. JOHN C. MICKELSON** and **C. E. THIEM** attended the North American Medical Association meeting in Sun Valley.

* * *

DR. WILLIAM B. STROMME of Minneapolis participated on a panel on conservative surgery for ectopic surgery at the 10th annual meeting of the American College of Obstetricians and Gynecologists in Chicago.

* * *

DR. DONALD H. HONATH of Owatonna has been appointed to membership on the Waseca Memorial Hospital medical staff.

* * *

DR. KARL E. SANDT, Minneapolis, just recently returned from West Pakistan and Malda, India where he has been doing eye surgery at the various mission hospitals.

* * *

The new officers of the Nicollet-LeSueur County Medical Society are: **DR. A HENRY THOMPSON,** president; **DR. HOMER RUSS,** vice-president; **DR. GEO. ENGSTROM,** secretary-treasurer.

* * *

DR. CLARK W. TRUESDALE was elected Mayor of Glencoe at their recent municipal election. **DR. MILTON M. HOWELL,** former mayor, did not run for re-election.

* * *

DR. C. A. ANDERSON of Hector, and **DR. H. M. SKAUG** of Chatfield attended the refresher course arranged by Mediclinics of Minnesota in Ft. Lauderdale, Florida.

* * *

The new medical clinic at Spring Valley will house the new quarters of **DOCTORS N. J. O'KEEFE, R. W. GUSTAFSON** and **R. W. MATSON.**

* * *

DR. HERMAN D. BENTZ, surgeon with the Mork Clinic in Anoka, was guest speaker at the semi-annual meeting of the Anoka County Federation of Women's club. **DR. B. R. GEURS** of Mankato spoke to the Immanuel hospital auxiliary meeting on how certain illnesses can cause complications to the heart.

DR. DENNIS KANE has just been appointed the new Director of Medical Education at Ancker Hospital.

* * *

DR. GERALD KUSS, Heron Lake physician, has accepted a three-year fellowship at the University of Minnesota where he will continue his studies to specialize in urology.

* * *

DR. WESLEY W. SPINK, professor of internal medicine at the University of Minnesota medical school, was recently installed as president-elect of the American College of Physicians at its annual meeting in Philadelphia. **DR. EDWARD C. ROSENOW,** Rochester, is an executive director of **ACP.**

* * *

DR. MERRILL D. CHESLER, Minneapolis plastic surgeon, recently participated in the symposium "Surgery of Trauma" held at the American College of Surgeons in Detroit.

* * *

DR. HERMAN KOOP observed his 35th anniversary of his practice in Cold Spring recently. He is associated with the St. Cloud hospital.

* * *

DR. DONALD HECKMAN of Owatonna and **DR. RICHARD SALK** of Albany were guest speakers at a meeting of the Holy Family Home and School Association.

* * *

DR. ROBERT A. GOOD, University of Minnesota pediatrics professor, was presented the American Society for Experimental Pathology award in Atlantic City.

* * *

DOCTORS HARRY J. SWEDLUND, JAMES R. STEWART, LORAN F. PILLING, MAURICE J. MARTIN, CLYDE E. CULP, and **ARTHUR G. WALTZ** have been appointed to the staff of the Mayo Clinic as consultants in their respective fields.

* * *

DR. ROGER A. MacDONALD of Littlefork has opened up a practice in Grand Marais, and **DR. MILTON M. HOWELL,** physician-surgeon at the Glencoe Clinic, has been appointed resident physician at the newly erected clinic at Hana on the Island of Maui, Hawaii.

* * *

Fairview hospital medical staff elected **DR. DALE H. CORREA,** chief of staff and **DR. ROBERT L. STURGES,** chief-elect. Other officers are: **DR. ROBERT R. COOPER,** secretary: **DR. HARLEY J. RACER,** treasurer, and **DRS. DONALD B. FRANE** and **CARLETON A. NELSON.**

* * *

DR. W. A. BRAND, Redwood Falls physician, celebrated his 86th birthday. Dr. Brand is still practicing and has no intention of retiring.

* * *

DR. WARD SHAVER of Fergus Falls addressed the Canadian Association of Radiologists in Winnipeg recently and used as his subject matter "Bursitis and Its Cure."

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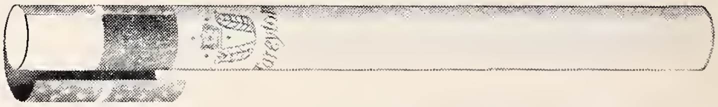

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EXPERIENCED GENERAL PRACTITIONER available for locum tenens work. One or two weeks at a time. Write Box 197, care of MINNESOTA MEDICINE, St. Paul.

G. P. or two wanted . . . in small town 80 miles from Twin Cities in heart of resort area. New well equipped hospital. 40-bed nursing home wing under construction. Practice well-established. Present M.D. specializing. Write Box 198, care of MINNESOTA MEDICINE, St. Paul.

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WANTED: Physician for Moose Lake State Hospital. Previous experience in psychiatry not necessary. Salary $9,012-$10,956 plus living quarters, heat, light. State employee benefits include Social Security, state retirement, annual vacation and sick leave. Contact Superintendent, Box 188, Moose Lake, Minnesota.

GENERAL PRACTITIONER—Excellent opportunity in town 3500 population near Minneapolis. Four man group in new clinic building. 65 bed open staff hospital. Early partnership. Immediate opening. Write: Donald McCoy, M.D. or Milton Howell, M.D., 624 Franklin Ave., Glencoe, Minnesota.

BY MAY 15. Young married physician with military service fulfilled to associate with a five-man group, all AAGP, Central Wisconsin city of 5000, completely equipped clinic associated with 50-bed hospital. Permits well rounded practice. Good salary leading to early partnership. Personal interview at our expense, if communication indicates. Write Box 188, care of MINNESOTA MEDICINE, St. Paul.

WANTED Locum Tenens, July through September, or until called for military duty. Six man group in Central Wisconsin city of 5000. Good opportunity for trial period for possible future association. Write Box 189, care of MINNESOTA MEDICINE, St. Paul.

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LOCUM TENENS wanted for last half July, August, or September. Also interested in permanent partner. Brand new clinic; salary open. Contact T. H. Lester, M.D., Browns Valley, Minnesota.

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ASSOCIATE IN GENERAL PRACTICE WANTED. Two year salary and then partnership. 38-bed hospital with emphasis on surgery. Contact: Dr. Peter Foderick, M. D., Hallock, Minnesota.

GENERAL PRACTITIONER with special interest in radiology wishes to relocate. Experience in all phases of medical practice excepting major surgery. Write Box 192, Care of MINNESOTA MEDICINE, St. Paul.

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EXCELLENT OPPORTUNITY for two general practitioners in small southwestern Minnesota community; equipped office space for rent in 20-bed hospital; practice unopposed; substantial income prospects, minimal investment. Housing available. Excellent hunting. Write Box 193, care of MINNESOTA MEDICINE, St. Paul.

GENERAL PRACTITIONER wanted for 12-man Midwestern group to do industrial and general medicine. Write Box 194, care of MINNESOTA MEDICINE, St. Paul.

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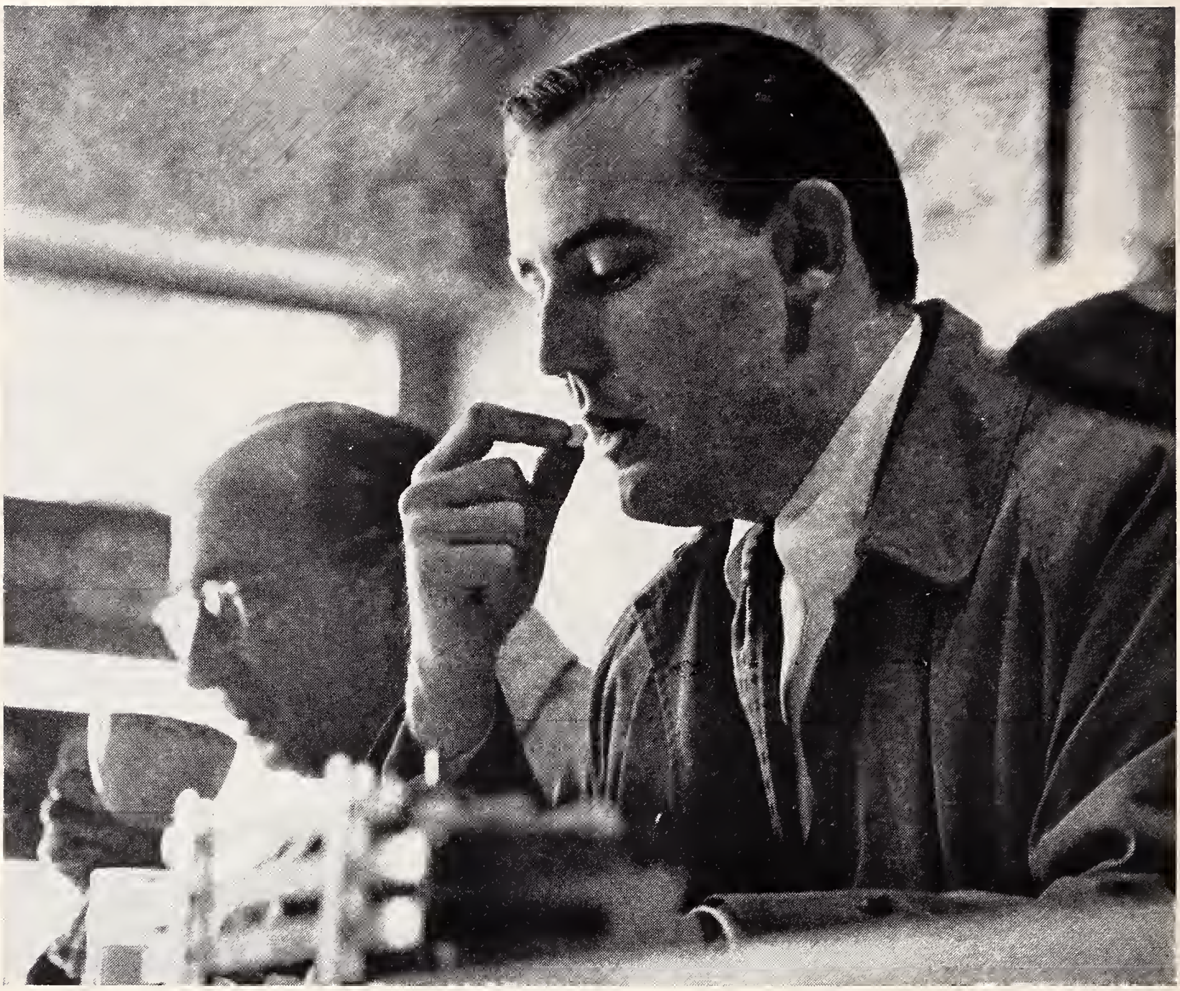

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President's Letter*

Man lives through many struggles in a lifetime. He is torn between diverse philosophies which necessitate his constant reorientation. Yet, without occasional objective appraisal, one may be swept along without purpose or direction.

For example, among the factors shaping man's destiny are the forces of good and evil and the less restrictive bounds of propriety and impropriety. We have gradually settled at some position between the conservative and the radical dogma. We vacillate somewhat as new pressures and persuasions lend their weight to our intellectually and emotionally comfortable position. However, it is about another struggle, so subtle that we scarcely recognize our role in it, that I am concerned in this discussion. I refer to man's uneasy equilibrium on a compromise road between total individualism and total absorption in the organizational effort.

How often in public discussion one has heard the stentorian espousal of "rugged individualism," of man's right and privilege to go his unhindered way. Spines have tingled collectively, crowds have cheered in accord, and throngs have wept in unison, as the virtues of the individual have been extolled. The cult of the individual has many champions, as opposed to organization, which has but few, of whom I am one.

At many levels the organization is beset by those who would tend to destroy it. This virus has invaded the books we read, and the universities in which we teach and indeed occasionally it has appeared within our own ranks in organized medicine.

A rash of books has appeared in recent years which picture the concept of organization as a monster voraciously devouring man's soul, shaping it into a pattern and spewing out an automaton, devoid of all free will. You have read the *Organization Man,* by William H. Whyte, Jr.; and *Life in the Crystal Palace* by Alan Harrington; *Status Seekers,* by Vance Packard; *Man in the Gray Flannel Suit,* by Sloan Wilson and others in which the philosophy of the organization is subtly assailed.

On our campuses a philosophy championing the individual enjoys widespread support. College officials report a new problem among students approaching graduation as they assist the students in securing positions. Many students want no part of large organizations. They will be no "man in a gray flannel suit": they wish their growing careers to be unstultified. Such students confuse the existence of a few ground rules with stifling regimentation: in careers, even as in baseball, a set of regulations must be used, none of which, however, places any limitation on how expert a player may become.

In our medical ranks one occasionally hears deprecating references to "city hall" as applying to the group which conducts the affairs of an organization. Whether at a county, state or national level, our organizational activities too often are discussed within our ranks in a context of unique detachment.

Man is effective primarily by means of his association with others. Although man is free, he must learn to quit swinging where his neighbor's nose begins. Without the benefits of organization, our society would resemble that of the Stone Age man who joined no causes, paid no dues and served on no committees. Man's freedom is the privilege of selecting those issues he wishes to support: to participate in none is a certain way of debasing freedom.

Man's inherent right is that of joining others

Continued on page 645

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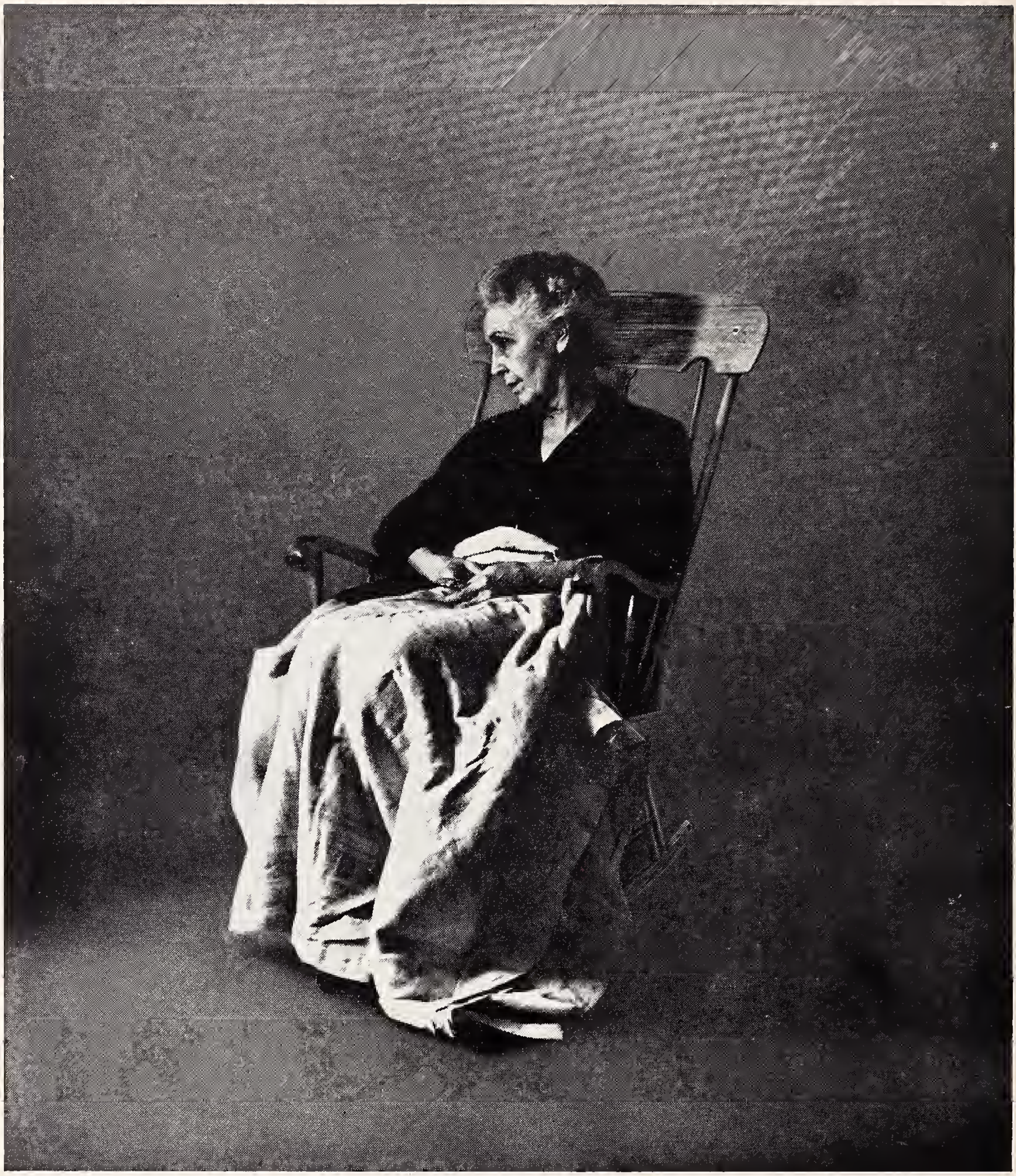
*Presidential Address at the meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 21 to 23, 1962.



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The authors present an interesting complication from the use of triparanol. They have reported two other patients with this complication and believe these changes are related to interrupted synthesis of cholesterol in the skin.

Complications in the Use of Triparanol (MER-29)*

Report of a case of Ichthyosis, Loss of Hair, and change in Hair Color

HAROLD O. PERRY, M.D.[**]
R. K. WINKELMANN, M.D.[**]
RICHARD W. P. ACHOR, M.D.[***]
Rochester, Minnesota

HAIR LOSS, at times with change in the color of the hair, can be anticipated in some patients as a consequence of administration of triparanol.* These changes may be sufficiently severe and progressive over a relatively short period so that the affected persons are often not recognized by close associates and friends. In addition to the hair changes, these patients also experience a generalized dryness of the skin that is clinically indistinguishable from ichthyosis.

The patient to be described is the third in a series of patients in whom this triad of changes—hair loss, change of hair color, and ichthyosis—has developed following administration of triparanol. The reaction seems of sufficient importance to emphasize its development and its relationship to ingestion of this drug.

Report of Case

A 47-year-old man was seen at the Mayo Clinic for the first time in April 1961. In September 1955 he had been advised to follow a diet low in fat content, because of a concentration of plasma cholesterol of 270 mg. per 100 ml. At that time his weight was 168 pounds. After some 4 months of this regimen his weight decreased to 148 pounds but without appreciable change in the level of cholesterol. Early in 1960 he was given nicotinic acid (2 gm. daily), which he took for 2 months without change in the concentration of his blood lipids.

---

* [p-(b-diethylaminoethoxy) phenyl]- 1 -(p-tolyl) - 2-(p-chlorophenyl) ethanol (trade name, MER-29), Wm. S. Merrell Company, Cincinnati, Ohio.

*Read at the meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 11, 1961.

[**] Section of Dermatology, Mayo Clinic and Mayo Foundation.

[***] Section of Medicine, Mayo Clinic and Mayo Foundation.

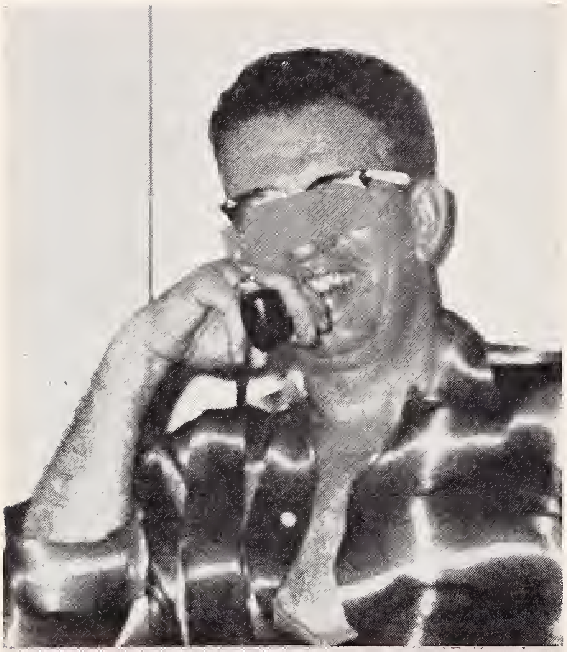

Fig. 1. Reproduction of a black-and-white print from a colored transparency showing usual dark hair and profuse body hair as present in December, 1959.

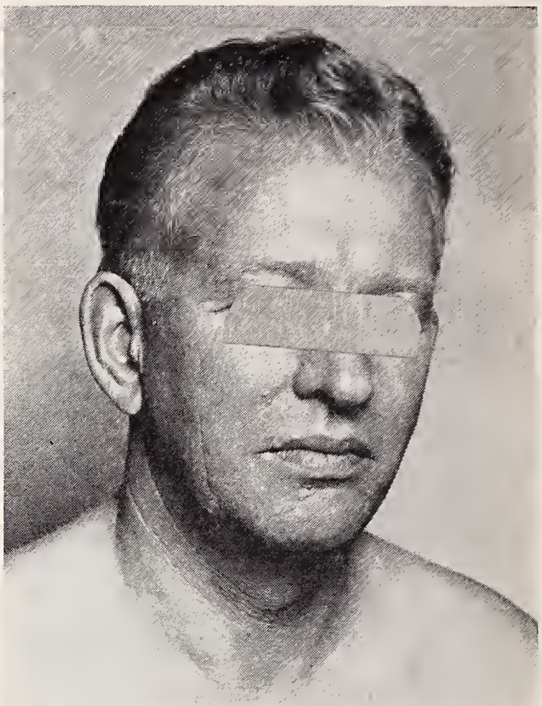

Fig. 2. Photograph taken in April 1961 demonstrates graying of hair about margins of scalp as well as color change of eyebrows.

In July 1960 therapy with triparanol (MER-29), 250 mg. daily, was initiated, and it was continued until December 1960. The level of plasma cholesterol was initially 209 mg. per 100 ml., and it increased to 253 mg. during therapy. No laboratory tests were made at the end of therapy.

In late November or early December the patient began to note excessive dryness of the skin with scaling and flaking, particularly in the region of the flank. He also noted loss of hair from the arms, legs, axilla, scalp, and pubic region. He stopped using triparanol on his own initiative during December 1960.

Some 2 months later, while on a vacation trip, the patient noted loss of hair about the margins of the scalp; in addition, the color of the hair changed from a brown to what he described as a sandy, almost olive-green, color, and there was whitening or greying of marginal hair. These changes were progressive for the next few weeks so that when he returned home 1 month later his employer, with whom he had worked for 20 years, did not recognize him. The patient had complained of fatigue during the time that he was receiving therapy for the elevated level of cholesterol, but this was not associated solely with administration of triparanol.

A general examination was carried out, with normal results. The concentration of hemoglobin was 13.9 gm. per 100 ml. of blood; erythrocytes numbered 4.82 million per cubic millimeter of blood and leukocytes 7200, with a normal differential distribution. The true level of sugar in the blood was 80 mg. per 100 ml., and the concentration of cholesterol with clear plasma was 199 mg. per 100 ml. A serologic test for syphilis was negative. The urinalysis gave normal results except for occasional casts. Alkaline phosphatase measured 8.6 King and Armstrong units per 100 ml. of serum, and the level of blood urea was 40 mg. per 100 ml. A cephalin-cholesterol flocculation test of the serum was negative. Electrophoretic analysis of the serum protein showed the albumin to be 3.33 gm. and alpha-1 globulin 1.75 gm., with a total protein of 6.97 gm. An electrocardiogram showed a heart rate of 75 per minute and a QRS interval of 0.10 second. In lead V-1 there was an inverted T with a low ampli-

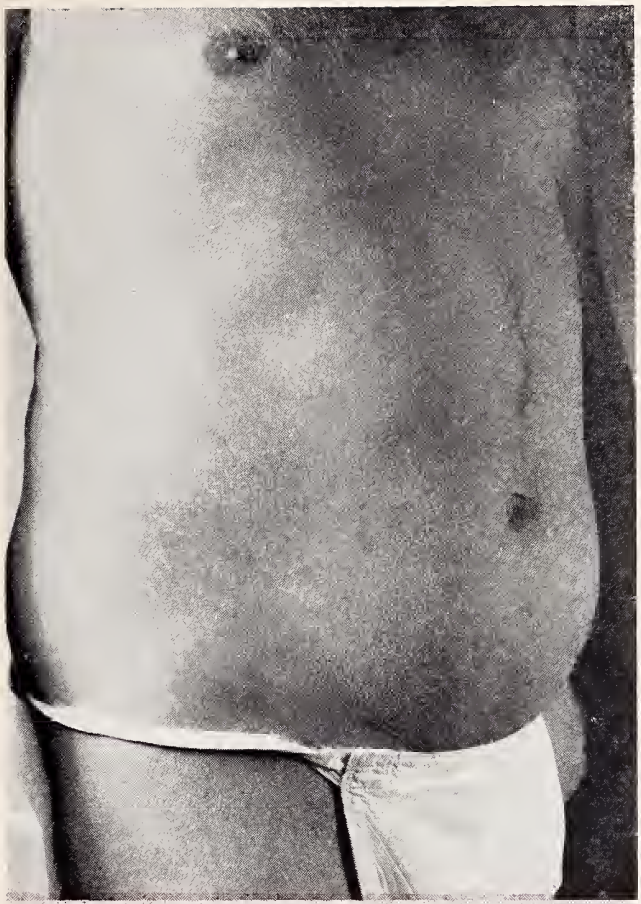

Fig. 3. Dryness and scaling of flank were present in April 1961. Note presence of only scant pubic hair.

tude and a notched QRS. Other minor changes were present but these were considered nonsignificant. An x-ray of the thorax was interpreted as being normal.

Dermatologic examination indicated a fairly adequate growth of hair, but the patient complained of its being light in color in contrast to his normal brown hair (fig. 1 and 2). There was loss of some marginal scalp hair. Over the trunk and particularly in the flank region a definite dryness and scaling of the skin was noted which was clinically indistinguishable from ichthyosis (fig. 3). A hair count, carried out by plucking hair from the scalp, showed that 30 per cent of the hairs were in a telogen phase of growth.

Comment

Triparanol is a drug which is reported to lower the concentration of cholesterol in the blood effectively and safely for long periods. Its principal action is to block the formation of cholesterol by preventing the conversion of 24-dehydrocholesterol (desmosterol) to cholesterol. For this reason, the use of triparanol was introduced as a means of reducing the concentration of cholesterol in patients who have hypercholesterolemic states.

The early studies of triparanol endorsed its almost complete lack of adverse reactions.[1] The patient reported by Estes[2] who complained of a dry skin may in reality have been experiencing the mildest form of an ichthyotic state which we are now seeing in a full-blown form. Our own initial experience with this drug would indicate that it is not as free of side effects as was thought. A former communication[3] gives information on seven patients who have experienced cutaneous side effects while being treated with triparanol for hypercholesterolemia. This case report is in substantial agreement with the case records of two of the men previously reported who experienced clinical ichthyosis of the skin with pronounced loss and change in color of the hair of the scalp and body.

The dosage of triparanol taken by this patient was the recommended amount, namely 250 mg. daily. Of the two male patients previously reported, one had taken up to 1000 mg. per day, the second, 250 mg. per day. Thus, experience with this patient would further suggest that undesirable cutaneous effects may occur when usual dosages of the drug are given and that overdosage is not the sole reason for these effects.

As in the case of one of the previously reported patients, the present patient experienced the cutaneous changes following an interval in which the drug had not been taken. This spatial relationship suggests that the blocking of the synthesis of cholesterol is associated with the inhibition of physiologic effects for normal development of hair and skin for some months.

Including the patient in the present report, the three patients so far encountered who developed ichthyosis, change in color of the hair, and loss of hair have been male patients. Five patients in whom hair loss alone developed were female. At this time it is impossible to explain the more severe involvement in the male patient.

Follow-up study of the two patients previously reported revealed that normal growth of hair, as well as normal coloration, was restored after several months. Thus, although side effects appeared following cessation of administration of the drug in the present patient, it can be expected that these changes are reversible and that there will be a reversion to a normal situation after a lapse of several months.

Since synthesis of cholesterol also takes place in the skin, we have assumed that the synthesis-blocking action of triparanol occurs in the skin as well as in the liver and that this is responsible for the changes which have been manifested clinically as ichthyosis. Precisely how interruption of synthesis of cholesterol affects hair growth and color is less well understood. It seems clear that these effects should be interpreted as physiologic side effects and not as toxic effects or allergic reactions in the usual appreciation of these reactions. The element of idiosyncrasy may be most important.

Although we are concerned with the side effect of alopecia in patients who receive triparanol, an early report by Toro[4] indicated that two female patients who were given the drug began to exhibit excessive growth of hair. This paradoxic reaction between these two groups of patients is difficult to explain.

Summary

A patient is reported who experienced ichthyosis, loss of hair, and change in color of the hair following use of triparanol (MER-29). This represents the third patient reported by us who had these specific findings associated with the administration of triparanol.

These changes are regarded as physiologic alterations related to interrupted synthesis of cholesterol, although the exact mechanisms are not understood.

It is anticipated that normal growth of hair with return of normal hair color and a reversion to soft, supple, and pliable skin will occur within a number of months in the patient described.

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Rabies is not a serious health problem in the United States in terms of human deaths per year. Between 1946 and 1960, 150 have died in the United States from this disease, and the peak of incidence occurred in 1952 with a drop to only two deaths in 1960. However, the Minnesota State Board of Health is currently swamped with requests to examine biting animals suspected of being rabid. This interesting discussion emphasizes the importance of dogs, cats, skunks, and cattle in terms of the animal reservoir for the disease. This timely article is of importance to all physicians practicing in our state in terms of possibly reducing an unnecessary demand upon our State Health Department.

A Plea for Discrimination

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Few diseases involve the physician, the health department, and the public in so many complex problems as rabies. This virus infection of the central nervous system, reputed to be universally fatal, and imbued with great emotional overtones of fear and horror, has become increasingly familiar to physicians in Minnesota since 1949; because the disease reservoir now is the wild animal, the skunk, there is little prospect of the problem disappearing in coming years.

The difficulties of the physician and the health department are essentially similar, and involve in the last analysis making decisions affecting the life or death of the patient, frequently with a minimum amount of reliable information. The health department and the physician base their decisions on their judgement of the particular situation.

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Table I
Rabies Examinations, Minnesota Department of Health
1948-1960

Year	Total Examinations	Total Positive	Per cent Positive
1948	27	3	11.1
1949	29	1	3.4
1950	26	2	7.7
1951	102	6	5.9
1952	113	6	5.3
1953	95	7	7.4
1954	112	8	7.1
1955	326	20	6.1
1956	493	43	8.7
1957	621	49	7.9
1958	1,116	62	5.6
1959	878	34	3.9
1960	912	10	1.1
TOTAL	4,850	251	5.2

The Value of Clinical History

By considering carefully various elements of the biting situation, the physician frequently can reassure the patient safely, and prevent, from the outset, the increasingly difficult task of laying the spectre of possible rabies, once suggested to the patient's mind. Thus, normal, expected biting by an animal rarely suggests rabies, especially when the animal is untamed, or startled, or goaded, or already injured by a trap or a prowling cat. Likewise, there generally must be a likely possibility that the biting animal itself was bitten and thus infected with rabies a few weeks or months earlier, in order for it to be capable of infecting the human now. Thus, animals raised from birth in pet shops, or very young animals, or animals restricted to areas free of rabies are not likely to have been exposed ever to rabies and therefore are less menacing. This type of common sense evidence is most significant in the evaluation of a possible rabies situation.

The Laboratory Problem

The results of laboratory examination for rabies of the biting animal provide one of the bits of evidence most relied upon for the doctor's decision. This aspect of the general problem, the laboratory examination, has become the particular difficulty of the health department.

The difficulty is that more animals are being sent in for examination than can be conveniently processed with the available personnel and facilities. In addition, it appears that the highly skilled personnel required for these diagnostic procedures so essential to the life or death decision of potential rabies cases are being used to an increasing degree for examinations of animals associated with little or no risk of rabies, but submitted because the animal happened to be available; see Table I. It is recognized that rabies can infect any warm-blooded mammal and thus theoretically be transmitted to man by biting of any species. Recently questions arose over action to be taken following a bite by a turtle; by a snake; and by various birds.

Perhaps a review of recent experience in Minnesota and the United States will help the physician to exercise a better degree of judgement in each particular situation, and thus conserve the laboratory service for its proper role.

The Incidence of Rabies

Table II shows the reported incidence of rabies in the United States since 1950, by species of

Table II
Reported Incidence of Rabies in the United States 1950-1960[1]

Year	Dogs	Cattle	Horses	Sheep	Swine	Cats	Goats	Misc.	Man	Total
1950	4,979	948	33	48	85	428	5	1,375	9	7,910
1951	5,194	821	34	35	53	480	4	1,387	14	8,022
1952	5,261	916	38	19	31	486	7	1,674	21	8,453
1953	5,688	1,012	21	42	38	538	5	1,479	14	8,837
1954	4,083	930	29	23	40	462	10	1,697	8	7,282
1955	2,657	835	33	18	30	343	8	1,915	5	5,844
1956	2,592	700	30	22	30	371	12	2,079	10	5,846
1957	1,908	654	24	13	16	386	12	1,989	6	5,008
*1958	1,643	660	31	22	20	353	4	2,075	6	4,814
*1959	1,124	700	22	8	18	310	4	1,925	6	4,117
*1960	697	563	36	17	16	288	4	1,805	2	3.428
TOTAL	35,826	8,739	331	267	377	4,445	75	19,400	101	69,561

*These figures include only those cases confirmed by the laboratory. The figures for previous years include some but not a great number of clinical cases from which tissue was not sent to the laboratory for confirmation.

[1] Taken from Report of April 14, 1961, United States Department of Agriculture, Agricultural Research Service, Animal Disease Eradication Division, Washington 25, D.C.

Table III
United States Human Rabies Deaths[1]

Year	Number of Deaths	Biting Animals						Number of Persons who Received Treatment			
		Dogs	Cats	Bats	Fox	Skunk	Unk.	Complete	Part	(?)	None
1946	12	8	2				2	3	0	2	7
1947	9	6					3	1	2	3	3
1948	17	13					4	3	4	3	7
1949	7	5	2					0	3	0	4
1950	11	10					1	2	0	4	5
1951	12	6		1			5	1	2	4	5
1952	20	14			2	1	3	2	1	4	13
1953	13	10			1		2	4	1	1	7
1954	14	10				2	2	1	2	1	10
1955	5	3				1	1	1	0	0	4
1956	9	7	1	1				0	2	0	7
1957	6	5					1	2	0	0	4
1958	6	2		1	1	1	1	3	0	0	3
1959	7	4		2			1	1	0	0	6
1960	2	1	1					0	1	0	1
TOTAL	150	104	6	5	4	5	26	24	18	22	86

[1] Taken from Reports received August 14, 1961, Veterinary Public Health Section, Communicable Disease Center, Atlanta, Georgia.

animal infected. Several important conclusions emerge. First, human cases of rabies are rare in the United States despite widespread infection in lower animals. The last known case of human rabies in Minnesota occurred in 1917 following a bite of an infected dog. Second, certain species of animals are by far the most significant reservoirs of rabies and should therefore be suspected when a human is bitten. These species are mainly the wild and domestic canines, such as dogs and foxes; other biting mammals such as cats and skunks; and farm animals such as cattle, horses, and swine easily bitten by these attackers. In 1960 for example among the 1,805 rabies cases listed in Table II under miscellaneous animals in the United states 910 were foxes, and 706 were skunks. It is very unusual for rabies to be found in the many other species of mammals, although isolated confirmed cases are reported each year from a wide variety of animals.

The rabid animal known or suspected as the source of infection in the rare human cases of rabies reported in the United States in recent years is shown in Table III. Again, it is apparent that certain types of exposure and a rather limited list of animal species have been associated with human cases.

Minnesota's reported cases of rabies in animals in recent years are shown in Table IV. Here again, while a range of several species is reported, the disease predominates in skunks, cattle, dogs, and cats. The reported positive cases in miscellaneous species such as squirrels, gophers, field mice, etc., have been questioned as being true rabies, because of lack of knowledge about the disease in these species. There may be inclusion bodies similar to Negri bodies in the brains of these animals, due to unknown causes, so that the diagnosis of rabies from microscopic examination alone is not entirely reliable. The cases reported in Table IV with asterisks have not necessarily been confirmed by animal inoculation.

Tabulation of the negative findings from rabies examinations of animals sent to the health department laboratories provides very useful data for weighing the hazards of exposure to these species. Table V shows these results for the last three years. Bites by these species are commonly reported by children handling these animals as pets, or in catching them, or by adults while feeding the creature. The animals generally are killed immediately or die suddenly for no apparent reason while under observation. There appears to be very little risk of rabies infection from these exposures.

Certain special developments of recent years need consideration by the physician in his evaluation of the particular situation. The first of these is the demonstration that bats as a species of

Table IV
Rabies in Animals, 1950-1960, Minnesota Department of Health

Year	Total	Badger	Bat	Beaver	Cat	Cattle	Civit Cat	Coyote	Dog	Fox	Goat	Gopher*	Groundhog	Horse	Mink	Mouse*	Muskrat	Rabbit*	Raccoon	Rat*	Sheep	Skunk	Squirrel*	Swine	Weasel	Woodchuck
1950	17				4	7			2													3	1			
1951	246	1			18	37	4		34	2		2	1	2	1	7	2		2	1	1	122	2	6		1
1952	270	1			19	47	3	1	17	2	1	2	1			1	3	1	3		2	158	3	2	1	2
1953	122				19	30			15	2							3		1			50	1	1		
1954	203				9	66	3		11					3	2		3	1	3			93		7		2
1955	127	1			8	34	2		6	3				1							1	69		1	1	
1956	168		1		12	21	5		18					1	1		2					106				1
1957	363			1	17	70	9		29	3		1		2			1	2	8	1	3	208	2	5		1
1958	461	2			39	87	12		35	4		4		3	6		1		9	2		238	7	6	2	4
1959	269	1		1	11	65	10		20	4					1		1		5	2		143		3		2
1960	120				7	23	6		6	2									3			68	1	2		2

*Rabies in animals that are questionable diagnoses. Laboratory examinations were not done in Minnesota Department of Health Laboratories and findings were not necessarily confirmed by animal inoculation.

Table V
Results of Rabies Examinations of Selected Species
Minnesota Department of Health
(Examination includes Impression Smears of Brain for Negri Bodies plus Animal Inoculations in each case)
1958-1960

Species	1958		1959		1960		Total	
	Number Examined	Number Positive	Number Examined	Number Positive	Number Examined	Number Positive	Number Examined	Number Positive
Chipmunk	30	0	24	0	27	0	81	0
Gopher	70	0	67	0	53	0	190	0
Hamster	14	0	21	0	43	0	78	0
Rabbit	51	0	34	0	41	0	126	0
Rodent	90	0	78	0	106	0	274	0
Squirrel	161	0	91	0	104	0	356	0
Mole	37	0	18	0	41	0	96	0

mammal commonly are infected with rabies. Rabid bats have been reported from 36 states including Minnesota, since the first report in Florida in 1953, and have been directly implicated as the infecting source of fatal rabies in five human cases since 1951. In a number of states with experience with bat rabies, evidence suggests that any bites by a bat, particularly when unprovoked, should be considered presumptively as constituting exposure to rabies.

Since 1952, 65 Minnesota bats have been examined for rabies by the Minnesota Department of Health. One bat was found to be rabid in 1956, and two in 1961. All of these cases were confirmed by animal inoculation. Despite this apparent low degree of infectivity, bats are considered particularly suspicious, in light of recent human rabies cases attributed to bat bites.

Antirabic Vaccine

The second development of recent years is in the use of an antirabies vaccine produced in duck embryo tissue, rather than the vaccine produced in rabbit central nervous system tissue. This new product eliminates much of the hazard of severe neural reaction to the vaccine which in the past was a major contraindication to antirabies vaccination. Even so, use of rabies vaccine in the absence of good indications is discouraged.

The third development concerns the effect upon the antigenic response to the vaccine of the use of hyperimmune rabies serum, or the use of cortisone or ACTH. When hyperimmune serum is used in addition to vaccine in post-exposure treatment, there is a problem of suppression of response to the vaccine. Accordingly, the WHO Expert Committee on rabies recommends in this situation that two supplemental doses of vaccine be given 10 days and 20 days following the completion of the usual vaccine schedule. Likewise, when cortisone or ACTH are used in treatment of serum or vaccine reactions, there may be suppression of antibody response to the vaccine.

Summary

In the current situation of endemic, wildlife rabies in Minnesota, many problems face the physician and health department in deciding how to handle a particular human association with an animal. Data are presented to help guide the evaluation of some of the important factors entering into the grave decisions which must be taken. It is hoped that by weighing these factors the physician can adequately preserve the welfare of his patient and at the same time not exhaust the laboratory resources so essential to sound patient care.

THE DOCTOR AS PHILOSOPHER

Julien de La Mettrie 1709-1751

In our Doctor-Philosopher series we have touched on William James' Pragmatism and John Locke's Empiricism; now we come to Julien de La Mettrie's Materialism: the theory that the existence and nature of matter alone are sufficient to explain the universe: a monistic theory excluding both dualism and pluralism.

Born in St. Malo, France, in 1709 La Mettrie grew up there with an intimate passion for literature. He might have become a writer exclusively if his father had not prevailed on him to consider the priesthood as a career, pointing out that a clergyman makes a better living than a poet. Inspired by the local doctor, however, La Mettrie decided on medicine instead of theology, countering his father's previous remark by replying that if a priest makes a better living than a poet, “a good prescription is still more profitable than an absolution.”

After receiving his medical degree at Rheims in 1728 he went to Leyden University for further study under Boerhaave, at that time the most eminent medical authority in the world—also a reputed materialist and atheist, whose heterodox views undoubtedly rubbed off on some of his students.

After five years with Boerhaave La Mettrie returned to St. Malo to practice there and to write articles on prevailing medical practices and how they might be improved, France at that time being decidedly backward compared with England, the Netherlands, and Germany. Though his frank denunciations of French medical practices naturally antagonized the medical authorities in Paris, La Mettrie continued to practice successfully in St. Malo for some years.

Becoming restless, however, he went to Paris in 1742 to become Surgeon to the Guard and accompanied it on a campaign to Germany. There, succumbing to illness, La Mettrie made on himself the observations that were to result later in his “Natural History of the Soul” (1745) and “Man a Machine” (1748), the two books that contain the essence of his materialistic philosophy. Noting the effect of fever on his mind during the illness, he concluded that the soul consists of the life principle, ‘esprit anima,’ which animates all parts of the body, is a product of the body, and has no independent existence apart from it. When the body is diseased, the soul is affected; illness is reflected in the mind. “The convalescence of a fool makes a man of sense,” said La Mettrie.

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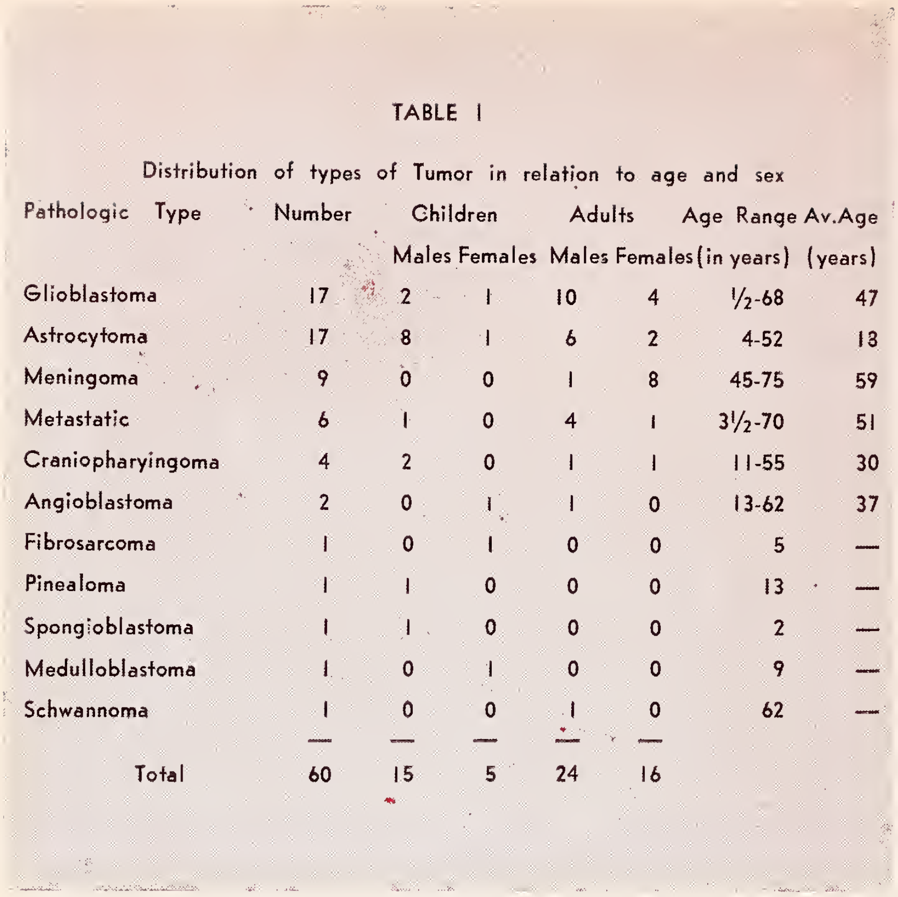

TABLE I

Distribution of types of Tumor in relation to age and sex

Pathologic Type	Number	Children		Adults		Age Range	Av.Age
		Males	Females	Males	Females	(in years)	(years)
Glioblastoma	17	2	1	10	4	½-68	47
Astrocytoma	17	8	1	6	2	4-52	13
Meningoma	9	0	0	1	8	45-75	59
Metastatic	6	1	0	4	1	3½-70	51
Craniopharyingoma	4	2	0	1	1	11-55	30
Angioblastoma	2	0	1	1	0	13-62	37
Fibrosarcoma	1	0	1	0	0	5	—
Pinealoma	1	1	0	0	0	13	—
Spongioblastoma	1	1	0	0	0	2	—
Medulloblastoma	1	0	1	0	0	9	—
Schwannoma	1	0	0	1	0	62	—
Total	60	15	5	24	16		

Electroencephalography for Diagnosis of

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Although it is generally accepted that electroencephalography (EEG) is a valuable diagnostic method for the localization of intracranial tumors, in most medical centers the final decision for surgery is usually made on the basis of air studies or angiography.

Previous studies by Lundervold and Stang in 1958[1] have shown that in a number of cases EEG has been the most accurate, and in some cases the only method which gave the correct localization of intracranial expanding lesions.

Because of fairly marked differences in criteria for the use of EEG in different centers, it was thought appropriate to review the results of the University of Minnesota, where in general an EEG is obtained only on those patients who pre-

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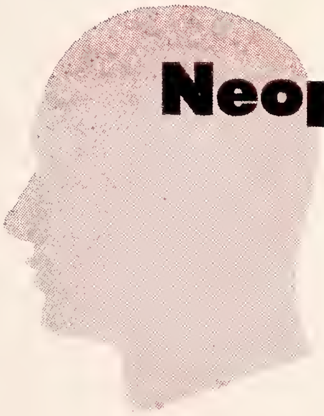
TABLE 2

Degree and type of EEG abnormality in relation to type of Tumor

	No. of Patients	Normal	Abnormal	Type of Abnormality			Degree of Abnormality		
				Focal	Diffuse	Depressed Voltage	Mild	Moderate	Severe
Glioblastoma	17	1	16	15	13	8	1	4	11
Astrocytoma	17	2	15	14	11	5	5	6	4
Meningioma	9	1	8	8	8	4	4	1	3
Metastatic	6	—	6	6	6	2	1	1	4
Craniopharyingioma	4	—	4	4	1	—	3	—	1
Remaining Types	7	3	4	4	1	1	2	1	1
Total	60	7	53	51	40	20	16	13	24

An EEG should be done on all patients suspected of having intracranial tumors. It is simple and safe, accurately localizes supratentorial tumors, and may be of value when other studies give false or incomplete information.

Intracranial Neoplasms



A Comparison with other Neurodiagnostic Methods

sent diagnostic problems, and to compare these results with the survey from Oslo University in Norway, where all patients with suspected intracranial disorders have a routine EEG. Since one of the present authors (A.L.) participated in both of these studies, it was felt that such a comparison would be valid.

Material and Methods

From October 1956 to October 1960 electroencephalograms were obtained on 60 patients, all but one having subsequently been shown to have pathologically proven intracranial neoplasms. The only exception was a 13½-year-old boy with the clinical and x-ray picture of a pinealoma. The EEG in this case was normal. Thirty-nine were males and twenty-one were females. Their ages ranged from six months to seventy-five years. In fifty-three cases the records were made within a period of two weeks prior to surgery or death.

The group comprised twenty children, ranging in age from six months to fifteen years, and forty adults between sixteen and seventy-five years of age.

The distribution of tumors by age and sex is shown in table 1.

Recordings were made with Grass IIID electroencephalograph machines run at a paper speed of 30 mm. per second. Twenty scalp electrodes were applied employing the 10-20 system of electrode placement. The routine runs utilized nongrounded common electrodes at the central vertex and on the ears for the temporal and ipsilateral parasagittal leads respectively, and linear bipolar electrode arrays. In most cases only spontaneous resting EEG's were made. Whenever multiple recordings were taken, only the last record prior to surgery was considered in our study.

For gradation of abnormalities, the records were classified into the following four categories:

1. Normal records.
2. Mildly abnormal records with focal disturbances which were seen intermittently. The major portions of the records were normal while only inconstant slow waves, sharp waves, or spikes were seen.
3. Moderately abnormal records characterized by constant focal slow wave and/or spike abnormality with either a normal or mildly abnormal background pattern.
4. Severally abnormal records characterized by high voltage slow wave and/or spike foci, localized depression of the voltage of the background activity, and often generalized slowing throughout the entire tracing.

Reports of angiograms and air studies were reviewed for all the patients and compared with the EEG reports.

Results

Table 2 illustrates the EEG findings of the various tumors and also indicates whether the abnormality was focal or diffuse. In this and subsequent tables the angioblastoma, fibrosarcoma, pinealoma, spongioblastoma, medulloblastoma, and Schwannoma are combined into the category "remaining types." For correlation of results of the different diagnostic methods employed, the patients were divided into three groups. The first included those patients who had a correct or nearly correct localization of the tumor. In the second group only correct lateralization was obtained. Those with no localization or incorrect localization were placed in the third group. This group also includes those patients in whom the x-ray procedures were not technically satisfactory due to such factors as inadequate filling of the ventricles, etc. Table 3 lists the diagnostic tests which were performed and a correlation of the results of these tests. Of importance is the

TABLE 3

Degree of accuracy of localization for different diagnostic procedures

	No. of Patients	Correct or nearly correct localization	Correct lateralization	Incorrect or no localization
Plain Skull X-ray	49	10	7	32
Ventriculogram	28	23	0	5
Pneumoencephalogram	28	18	0	10
Carotid Angiogram	40	17	1	22
Vertebral Angiogram	4	1	0	3
Electroencephalogram	60	42	1	17

last column of figures which totals the incorrect results with each of these neurodiagnostic methods.

It must be pointed out that there is a definite factor favoring the EEG in this series, since the EEG was often performed after failure of a contrast x-ray study and most of those cases having successful localization with a contrast study did not have an EEG and are, therefore, not included.

The EEG was more accurate with supratentorial than infratentorial lesions. Fourteen of the seventeen glioblastomas were correctly localized. In one case there was a normal record; in another, only correct lateralization was obtained. One glioblastoma produced only diffuse disturbances. Of the seventeen astrocytomas, eleven were correctly localized. Of the remaining six, five were in the posterior fossa; one, having a normal EEG, was in the left temporal lobe. All the cases with supratentorial meningiomas and metastatic lesions were localized correctly. Of the forty-seven patients with supratentorial lesions of all types, eighty percent were correctly localized by EEG.

Of special interest were the two patients whose neoplasms were localized by the EEG, but were not seen on the x-ray contrast examinations. A fifty-eight year old man with a four month history of focal motor seizures starting in the left hand had a normal right carotid angiogram, pneumoencephalogram, and ventriculogram. The EEG showed a severe right posterior temporal and mid temporal slow wave focus with depression of the alpha activity. Exploratory surgery was performed, but failed to demonstrate the lesion. He expired two days later due to a postoperative hematoma. Autopsy disclosed a cystic glioblastoma in the right frontal and temporal lobes.

A sixty-two year old man was admitted with focal motor seizures of the left extremities and progressive left hemiparesis of one month's duration. The plain skull x-rays, right carotid angiogram, vertebral angiogram, and pneumoencephalogram were normal. The EEG showed a severe right parietal and posterior temporal slow wave focus and depression of the fast activity on the right side. During an exploratory craniotomy needle exploration through the tense dura did not localize the lesion. An electrocorticogram localized an abnormality which proved to be a three centimeters glioblastoma near the right sylvian fissure.

There were some patients in whom the EEG indicated multiple neoplasms while contrast studies showed only solitary lesions. A seventy year old man with bilateral metastases had bilateral EEG foci but only a left sided lesion on the pneumoencephalogram, while the plain skull x-ray and carotid angiogram were normal. In several other patients the EEG showed focal abnormalities at the time when x-ray studies were normal or unsatisfactory. After further progression of clinical and electroencephalographic findings, repeat x-ray studies delineated the lesions which had been previously localized by EEG.

Table 4 shows the results of the EEG's in relation to the location of the tumor, the ap-

TABLE 4

Degree of EEG abnormality in relation to location, size and rapidity of growth of tumors

LOCALIZATION OF TUMOR

	Normal	Mild	Moderate	Severe	
Extracerebral	2	6	2	3	13
Posterior Fossa	3	5	4	1	13
Intracerebral	2	5	7	20	34
	7	16	13	24	60

APPROXIMATE SIZE OF TUMOR

	Normal	Mild	Moderate	Severe	
2 cm. diameter	2	3	1	—	6
4 cm. diameter	5	9	8	8	30
6 cm. diameter	—	4	4	16	24
	7	16	13	24	60

DURATION OF SYMPTOMS

	Normal	Mild	Moderate	Severe	
More than 1 year	3	9	6	9	27
6 - 12 months	1	2	1	3	7
Less than 6 months	3	5	6	12	26
	7	16	13	24	60

proximate size of the tumor, and the duration of symptoms, without regard to pathologic type.

The most abnormal records were obtained in the patients with the glioblastomas and the metastatic lesions. Only one of these patients had a normal record. This was a twenty-eight year old man with a small infiltrating glioblastoma of the left temporal lobe. The plain skull x-ray, carotid angiogram, and pneumoencephalogram were also normal. Surgery was performed on the basis of the history and clinical examination.

Only two patients with glioblastomas or metastatic tumors had mildly abnormal records. On the other hand, fifteen of twenty-three patients with these types of neoplasms had severe abnormalities. This represents a much higher incidence of severe abnormalities than in any other type of tumor.

In all, seven patients had a normal record. The one with a glioblastoma has already been mentioned. In four patients with normal records, the tumor was located in the posterior fossa. One other patient had an astrocytoma in the left temporal lobe which was correctly localized by both ventriculography and carotid angiography. The remaining patient with a normal EEG was a boy with a pinealoma. The plain skull x-ray and ventriculogram correctly localized this lesion.

Discussion

This investigation of the value of EEG as a diagnostic method for brain tumors, where this method is used selectively for difficult cases, is in general agreement with the results from a center where EEG is used more routinely.[1]

In the publication from Oslo University, it was shown that of one hundred and fifty patients with expanding intracranial lesions, EEG was the only method which showed the correct localization of the tumor in seven cases (five percent). Among the sixty problem cases from the University of Minnesota, five (eight percent) had correct localization only by EEG. Two of these patients had normal x-ray contrast studies. The other three had non-localizing or incomplete plain or contrast x-ray examinations.

In this study as well as in the study from Oslo University, the results of the EEG examination in cases of intracranial tumors were the same as found by others.[2-7] The degree of abnormality in the EEG tracing depended upon the localization of the tumor, its size, and the rate of growth. Large intracerebral rapidly expanding tumors gave a severely abnormal EEG. On the other hand, a normal EEG could be found on patients with a small, slowly growing tumor that was usually extracerebral or in the posterior fossa.

One would expect that the percentage of correct EEG localizations would be higher if all patients with intracranial tumors had an EEG rather than if EEG was obtained only on the more difficult cases. However, when comparing the results from Oslo with our results, the differences were small. Ninety percent of the patients from Oslo and eighty percent of the patients from Minneapolis with supratentorial tumors had correct localization of the lesion. The localizing value of EEG in patients with posterior fossa lesions was lower in both studies, and this is also in keeping with the general concensus in the literature.

Summary

The results of EEG examination in sixty diagnostic problem patients with intracranial neoplasms are presented. A comparison is made with a similar study from a hospital where the EEG is performed as a routine procedure. Eighty percent of patients with supratentorial tumors had correct EEG localization compared to ninety percent correct localization when routine EEG's were obtained. In both series the EEG was of little or no localizing value in posterior fossa tumors.

The EEG was of definitive diagnostic value in some cases where intracranial contrast studies were of no value or gave false or incomplete information.

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LA METTRIE Continued from page 605

His theory included the idea that each separate part of the body, aside from its subtle connection with the brain, is individually energized and this point he illustrated by numerous examples:

1. Muscles separated from the body contract when they are excited.
2. The intestines retain for a long period their peristaltic action.
3. The heart of a frog moves for more than an hour after its separation from the body.

The character and quality of the individual soul are determined by the chance configuration of cells, tissues, fibers, etc. Said La Mettrie: "A mere nothing, a little fibre, some trifling thing that the most subtle anatomy cannot discover, would have made two idiots out of Erasmus and Fontanelle."

A natural corrolary to La Mettrie's doctrine of materialism was his conviction that since the soul was physical, it must also be mortal. His writings to that effect exposed him to charges of heresy by the clergy, which in addition to the hostility toward him for his attacks on the benighted medical practices in France, obliged him to flee to Leyden in 1746, where he continued to write satires on what he regarded as the ignorance and charlatinism of doctors.

Also consistent with his materialism was his assumption of mechanism: we act under necessity and are therefore not responsible for our acts; consequently we deserve neither credit nor discredit for our deeds. Criminals should be treated, not punished; and La Mettrie proposed to substitute the physician for the clergyman and judge, an attitude on penology surprisingly modern and progressive for a thinker of La Mettrie's era.

Furthermore, if man is nothing but body, there is no other pleasure than that of the body; for the lowest man there is only intense and brief sensuous pleasure. "If nature has made you a hog, go wallow in the mire like the swine; for you are capable of no higher happiness." For the educated man, however, refined, intellectual enjoyment (still physical) will take the place of gross bodily pleasure. Intellectual enjoyment is calm and lasting, conducive to greater happiness and higher virtue.

On the subject of religion La Mettrie claims that a state of atheists would be a most happy state, relieved of religion with its sense of guilt, moral responsibility, fear of retribution, etc.

As for morality: "To do good involves such pleasure, that to be wicked is in itself a sufficient punishment." For La Mettrie the essence of the moral law lies in the doctrine: Not to do to others what we would not that they should do to us.

After leaving Holland, which had finally forbidden him to remain there longer, he took asylum in Berlin at the invitation of Frederick, where he was admitted to the Academy and resumed medical practice until he died in 1751 at the age of 41.

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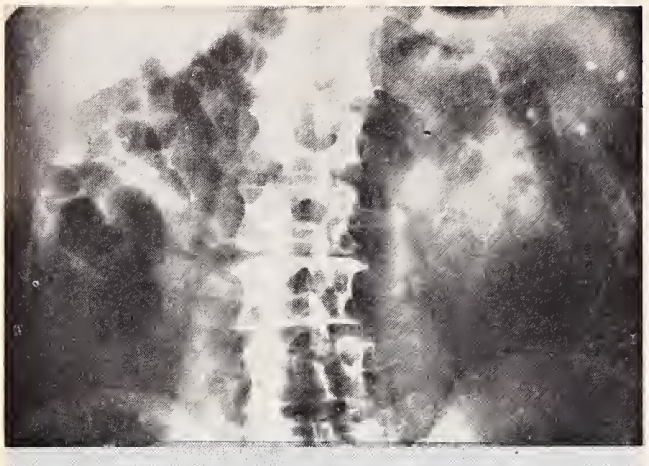

Fig. 1 — X-ray film of the abdomen demonstrating calcified foci in the spleen.

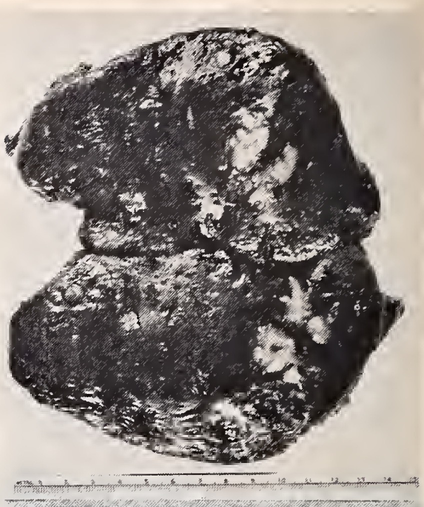

Fig. 2. — Freshly cut spleen showing foci of necrosis and suppuration, containing calcified material. Pure culture of *Br. suis* isolated from exudate.

Recurrent Fever for 18 Years

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The majority of cases of human brucellosis in the United States are due to **Brucella abortus.**[1] Although a state of ill health may endure for years after an acute attack, demonstrable anatomical alterations and diagnostic bacteriological and serological evidence are frequently lacking, making the diagnosis of chronic brucellosis questionable in many cases. Chronic suppurative complications occur more frequently following infections caused by **Brucella suis.** Localization of **Br. suis** within the liver and spleen results in foci of suppuration, with prolonged illness, hypersplenism and calcification of suppurating nodules in the liver and spleen that may be demonstrated on x-ray films.[1-5]

This report is concerned with a meat pack-

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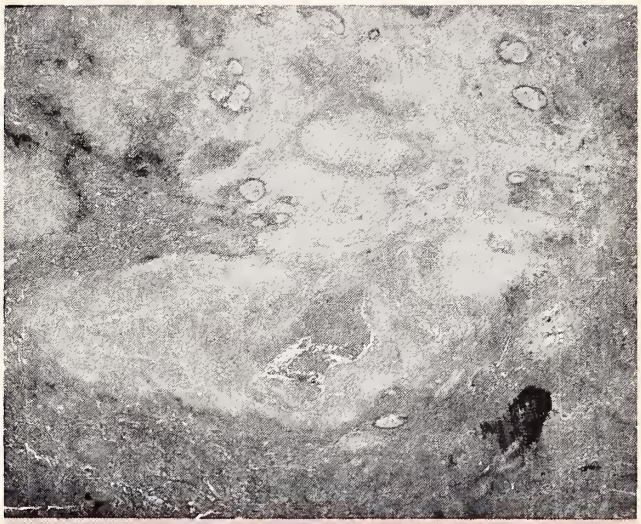

Fig. 3. — Section of caseated area of spleen, which simulates tuberculosis. Note dark calcified areas.

We are alerted to the continuing problem of brucellosis with infection due to the porcine strain. The possibility of prolonged chronic illness must be recognized by clinicians and proper therapy instituted. The public health aspects of brucellosis must not be ignored if we are to continue to control this disease.

due to

Brucellosis (Br. Suis)

ing plant employee who had a recognized acute attack of brucellosis followed by intermittent periods of chills and fever for 18 years. The history of an acute attack and the presence of brucella agglutinins in the serum of a febrile patient indicated persistent infection. The roentgenological detection of calcified nodules in the spleen suggested that chronic suppuration in that organ might be the cause of his continued illness. This was confirmed at the time of surgery. Splenectomy and intensive antibiotic therapy resulted in recovery, and the patient has enjoyed continued good health for over a year.

Case Report

C. W., a 58 year old white married male was seen at the University Hospitals on March 21, 1960, because of recurrent chills and fever that had occurred at monthly intervals since July 1959. Associated malaise and weakness forced him to give up working at odd jobs. He had received "broad-spectrum" antibiotics without improvement for several months prior to entry. Upon close questioning, he revealed that he had suffered similar episodes of illness following an attack of brucellosis in 1942, 18 years previously. At that time he had been employed as a butcher on the hog kill of a meat packing plant, and his duties had included removing cervical lymph nodes from the carcasses. He stated that he never regained his health subsequent to this illness. For years he had complained of intermittent low back pain, and had been told that he had "degenerative disease of the discs". He had always been an overweight, rather tense person. A diagnosis of duodenal ulcer had been established by x-ray in 1932, 10 years before his initial attack of brucellosis. There had been no other known exposure to brucellosis since his original illness.

On admission to the hospital his temperature was 101.4 F.; pulse, 85; blood pressure, 180/110 mm. Hg.; and weight, 180 lb. No abnormal adenopathy was apparent. The heart and lungs were within normal limits for his age. The liver was palpated at the costal margin, but the spleen was not felt. No tenderness was detected over the spine. The remainder of the examination was not remarkable.

Laboratory data: Urine analysis normal. Hgb. 16.2 Gm., leucocytes, 5900; P/57, L/38, M/1, E,4; sedimentation rate normal. Brucella agglutinins were present in a titer of 1:320, but blood cultures remained sterile. An aspirate of sternal bone marrow revealed no abnormal morphology, and a culture remained sterile. An L.E. clot was negative. X-ray films of the gastro-intestinal tract and intravenous pyelography were interpreted as being within normal limits. However, films of the abdomen showed calcified splenic nodules. There were no nodules in the liver (Fig. 1). Films of the spine revealed narrowing of the intervertebral space between L2 and L3, and between L5 and S1. There were associated proliferative changes of the vertebral bodies. An electrocardiogram was normal. Hepatic functional studies showed no abnormalities except for a 3+ cephalin-cholesterol and 16% bromsulfalein retention.

After a period of observation and study, it was decided to carry out a splenectomy on April 19, 1960 with the expectation that the residual focus of brucella suppuration would be removed. Surgeons encountered a spleen that was secured to the liver and diaphragm by adhesions, which were divided, and the spleen, weighing 267 Gm., was removed. A biopsy of the liver was done. The patient recovered from the operation without any serious consequences, except for dehiscence of the wound a week postoperatively. This was corrected without difficulty. On the day of surgery treatment with tetracycline (Achromycin) was instituted. He received 0.5 Gm. 4 times daily for the following 3 months.

Sections of the liver biopsy revealed normal hepatic architecture, except for small granuloma in the portal spaces, as described elsewhere.[7] The capsule of the spleen was intact. On cutting through the spleen, there were seen several greyish-white necrotic nodules measuring up to 2 cm. in diameter (Fig. 2). Some of these nodules had central liquifaction from which a pure culture of *Br. suis* was obtained. Other nodules contained finely distributed calcium. Microscopic examination of the spleen revealed many large areas of suppuration and inflammation. Some of these areas consisted of a central zone of exudate surrounded by proliferating fibrous tissue. Other areas showed foci of caseation and foci of calcium, characteristic of that seen in tuberculosis (Fig. 3). No brucellae were demonstrated in stained sections.

The patient left the hospital approximately one month after surgery, during which time his brucella agglutinin titer reached a maximum of 1:640, but blood cultures remained sterile. Six months later he was feeling well with a brucella titer of 1:80. He has been free of febrile attacks for over one year following splenectomy.

Discussion

The incidence of human brucellosis is on the decline in the United States because of the control and eradication of bovine brucellosis. However, infection due to **Br. suis** still poses a problem, as exemplified by the severe epidemic of 29 cases occurring in a meat packing plant in Iowa in 1959-60.[8] A reservoir of **Br. suis** still persists in swine in the United States and other countries. Complete elimination of porcine brucellosis is difficult, and for that reason sporadic cases of human disease can be anticipated. As this report has indicated, debilitating illness over a long period of time occurs with infections caused by **Br. suis.** The disease may extend for more than 20 years.[9]

Antibiotic therapy is highly effective in the acute stages of brucellosis, but elimination of brucellae from walled-off suppurating areas by such treatment should not be expected. Surgical drainage or excision of such foci in combination with tetracycline therapy are desirable. The usual recommended antibiotic regime is 0.5 Gm. 4 times daily for 3 to 4 weeks, but in cases of suppuration we have elected to extend treatment for at least twice as long. Additional recommendations have included the simultaneous use of intramuscular streptomycin in a dose of 0.5 Gm. twice daily for 2 weeks.

Brucellosis should still be considered in the differential diagnosis of fever of undetermined origin. The most reliable diagnostic screening procedure is the agglutination test. With but rare exceptions, agglutinins can be demonstrated in the serum in the presence of active disease, although the more chronic cases may exhibit titers below 1:100. In addition to bacteriological studies, x-ray films of the abdomen should be carried out in a search for calcified foci in the kidneys, liver or spleen. There are now on record a sufficient number of cases with calcified and suppurating splenic foci due to **Br. suis** to warrant such roentgenological studies in the suspected cases because splenectomy has been followed by recovery.

Summary

A patient with intermittent chills and fever of 18 years' duration was found to have a suppurative focus in the spleen due to **Br. Suis.** He has remained well for over one year following splenectomy and therapy with tetracycline. Brucellosis must still be considered in the differential diagnosis of fever of undetermined etiology. With rare exceptions the most dependable diagnostic screening procedure is the agglutination test.

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Medical Students Selected

A class of 150 students has been selected for entrance into the University of Minnesota medical school for the fall, 1962. Selections were made from 504 applications, a record high for the past 10 years.

A decision to drop four requirements, for admission into the medical school, has been approved by the college of medical sciences, effective in the fall of 1963. The courses are qualitative analysis, psychology, genetics and physical chemistry. The change in course requirements will not affect the class entering in the fall, 1962.

Mental Attitude

Carry your chin in and the crown of your head high, fill the lungs to the utmost; drink in the sunshine; greet your friends with a smile and put soul into every hand-clasp. Picture in your mind the able, earnest, useful person you desire to be, and the thought you hold is hourly transforming you into that particular individual.—*Fra Elbertus*

Responsibilities gravitate to the person who can shoulder them, and power flows to the man who knows how.—*Elbert Hubbard*

There is a multiplicity of aches and pains in many individuals in which organic findings are often minimal. These may plaque the patient with misery and the doctor with his inability to make an accurate diagnosis. A study of this morphologic-etiologic classification of peripheral neuritis could be beneficial in clarifyng and solving many of these annoying problems.

A Morphologic–Etiologic Classification of Diseases of the Peripheral Nerves (Peripheral Neuropathy)**

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WHEREAS the term "neuritis" is often used incorrectly to designate a pain of undetermined cause, Woltman[1] has pointed out that this term — sometimes referred to as "neuropathy" — should be restricted "to designate the more or less prolonged disorders of sensation, motility and visceral function, due to disease or trauma of any peripheral somatic nerve or nerves." When this definition is adhered to by clinicians, a clearer picture emerges of the clinical syndrome. In turn, a classification of peripheral neuropathy based on etiology can be established. Treatment logically based on etiologic factors should lead to more specific management of the myriad forms of peripheral neuritis (or neuropathy).

Signs & Symptoms

Although pain is commonly a feature of peripheral neuritis, there are many types of neuritis which are painless. When pain is present, it is described in many different terms, such as aching, sharp, dull, nagging, boring, burning, and stinging. The pain may be constant or intermittent, but it always should be confined within the anatomic distribution of a nerve or group of nerves. Other sensory symptoms include paresthesia, which is variously described as a feeling of numbness, tingling, prickling, formication, burning, or coldness. In some patients, the skin supplied by the diseased nerve or nerves may be hyposensitive or hypersensitive (dysesthetic) to touch or pressure; thus dysesthesia might be elicited by the touch of clothing or bedclothes. On examination of the patient, either decreased or increased sensitivity may be found objectively. Severe lesions may result in complete loss of appreciation of touch, pain, and temperature, as well as in difficulty with vibratory sensibility and recognition of passive movement of joints. When sensory changes are minimal, difficulty with recognition of two-point discrimination or traced figures may predominate.

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**Read at the meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 11, 1961.

Some patients have weakness as the only complaint, with little or no sensory component. The weakness may be generalized or restricted to the distribution of a single major nerve or portion of a plexus. When there is generalized weakness, it is commonly greater in the distal muscles of extremities, although at times the proximal muscles are the weaker ones.

Vasomotor or trophic disturbances may be encountered, usually in the distal portion of an extremity; these include rubor, pallor, or cyanosis, in addition to objective warmth or coolness of an extremity. In some cases hyperhidrosis or hypohidrosis may be observed, and at times edema or atrophy of the skin is seen. Hyperkeratosis, increased pigmentation, depigmentation, abnormal growth of hair or nails, or painless ulcers may be a feature of a disorder of peripheral nerves.

Morphologic Classification

The most elementary classification is dependent upon whether motor fibers or sensory fibers of peripheral nerves are involved in the pathologic process. Thus, neuritis (neuropathy) may be sensory, motor, or mixed sensory and motor.

The morphologic classification may be broadened then to include the distribution of the involved nerve or nerves, and therefore neuropathy may be classified in the following ways.

1. Mononeuritis — a disorder of a single nerve.

2. Mononeuritis multiplex — a disorder of several isolated nerves, often anatomically widely separated (such as the median nerve in one upper extremity and the radial nerve in the other upper extremity).

3. Radiculitis — a disorder of a single nerve root.

4. Polyradiculitis — a disorder of multiple nerve roots, usually in a symmetric fashion; this is often referred to as "neuronitis" and sometimes termed "proximal polyneuritis."

5. Multiple neuritis or polyneuritis — a diffuse disorder of many nerves characterized by symmetry of distribution, with the distal portions of the extremities being more involved than the proximal parts. When this is of the sensory type, it produces the commonly recognized stocking or glove type of sensory disturbance. Because of this, it is mistaken at times for conversion hysteria by the unwary clinician.

6. Plexitis — a disorder of a plexus or a portion of a plexus, such as the brachial plexus or lumbosacral plexus.

The separation of peripheral neuropathy into these six groups is clinically helpful since the categorization of a case into one of these groups is often an early step in determining the cause of the neuropathy. Thus the presence of mononeuritis usually suggests a mechanical disorder, as in the case of a tardy ulnar palsy with pressure on the ulnar nerve at the elbow or in the carpal tunnel syndrome, in which the median nerve is compressed in the carpal canal. On the other hand, the presence of mononeuritis multiplex usually suggests a systemic illness, such as periarteritis nodosa; diabetes mellitus may be associated with a special form of mononeuritis multiplex with bilateral involvement of the femoral nerves. Radiculitis is often indicative of a local process, such as a protruded intervertebral disk, hypertrophic ridging of the spine, or a localized tumor, for example a neurofibroma. This contrasts sharply with the cause of polyradiculitis, which is often "inflammatory," as in the case of the syndrome of infectious neuronitis, or Guillain-Barre syndrome. Distal polyneuritis should suggest a toxic agent, such as a heavy metal or an organic solvent, or a more general systemic illness, such as diabetes mellitus, porphyria, amyloidosis, or avitaminosis. Finally, plexitis, if it is not caused by mechanical trauma, may be the aftermath of serum sickness, as seen involving the brachial plexus after the use of tetanus antitoxin or in involvement of the plexus by metastatic carcinoma.

Etiologic Classification

In most instances the specific treatment of peripheral neuritis should be based on the underlying cause. Different forms of neuritis require markedly different forms of therapy, depending upon the underlying cause of the neuritis. The following etiologic classification[2] has been found to be helpful in recognizing the multiple causes of neuritis.

I. Arauma.

A. Mechanical: compression, traction, fractures and dislocation of bones, lacerations, posture during sleep and anesthesia, birth trauma, injections (subcutaneous, intramuscular, or intravenous), occupations.

B. Thermal (refrigeration or burns).

C. Radiation (radium or roentgen rays).

D. Electrical.

II. Toxins.

A. Heavy metals: lead, arsenic, bismuth, mercury, thallium, copper, silver, gold, antimony, zinc.

B. Nonmetallic compounds: tri-orthocresyl phosphate (Jamaica ginger), carbon tetrachloride, carbon disulfide, mustard gas, carbon monoxide, trichlorethylene, trinitrotoluene, tetrachlorethane, benzene, gasoline, ortho-dinitrophenol, emetine, sulfonamides, penicillin, streptomycin, isoniazid, stilbamidine, 2,4-D (2, 4 dichlorophenoxyacetic acid), hydralazine, furaltadone.

III. Infectious and Inflammatory Diseases.

Infectious neuronitis, herpes zoster, diphtheria, leprosy, tuberculosis, syphilis, infectious mononucleosis, typhoid fever, typhus fever, influenza, pneumonia, psoas abscess, malaria, infectious hepatitis, mumps, streptococcic sore throat, puerperal sepsis, sarcoidosis, tenosynovitis, rheumatoid arthritis, cat scratch fever.

IV. Allergy.

Vaccines, serums (antitoxins), insect bites.

V. Vitamin Deficiencies.

Pernicious anemia, macrocytic anemias other than pernicious anemia, chronic alcoholism, pellagra, beriberi, malnutrition (voluntary, prison starvation, or starvation associated with medical, surgical, or psychiatric diseases), pregnancy, sprue and other malabsorption syndromes.

VI. Endocrine and Metabolic Disease.

Diabetes mellitus, hyperinsulinism (endogenous or exogenous), porphyria, gout, amyloidosis, acromegaly, myxedema.

VII. Vascular Diseases.

Arteriosclerosis, periarteritis nodosa, lupus erythematosus, thromboangiitis obliterans, Volkmann's ischemia, mechanical compression (trauma, neoplastic diseases, tourniquets), embolism and hemorrhage associated with bacterial endocarditis or blood dyscrasia (leukemia, thrombocytopenic purpura).

VIII. Heredofamilial Diseases.

Peroneal muscular atrophy (Charcot-Marie-Tooth disease), hypertrophic interstitial neuritis (Dejerine-Sottas disease), Refsum's disease, hereditary sensory neuropathy, heredofamilial mononeuritis multiplex (with brachial predilection).

IX. Neoplasms.

Ganglioneuromas, amputation neuromas, solitary or multiple neurofibromas, perineural cysts, lipomas, carcinomas, lymphomas, multiple myeloma.

Approach to Treatment

Diagnosis of the underlying etiologic factors in neuritis leads to a rational approach to therapy. Thus, surgery is the logical treatment of some forms of mechanical compression of nerves, as in the case of tardy ulnar palsy or the carpal tunnel syndrome. At other times, correction of a habit such as crossing one leg over the other may be all that is necessary, as exemplified by the crossed-leg syndrome (peroneal palsy).

Specific types of heavy-metal neuropathy should be treated with specific medicaments, such as BAL for arsenical or mercurial neuropathy or calcium disodium versenate for lead neuropathy. Cortisone or one of the other adrenal steroids is useful in the neuropathies resulting from administration of a vaccine or antitoxin. Of course, in the case of a neuropathy produced by avitaminosis, the treatment should be the administration of one or more members of the vitamin B complex, depending on the type of avitaminosis.

When a systemic illness is the underlying cause of a neuropathy, treatment is directed toward the specific medical condition, such as the use of adrenal steroids in the treatment of periarteritis nodosa or lupus erythematosus. In some instances, for example amyloidosis, there is no specific treatment, and general measures such as physiotherapy, braces, and analgesic agents are all that can be offered until more specific therapy is found.

Usually, only general therapeutic measures are available to patients with the heredofamilial neuropathies. At times, the orthopedic surgeon is the therapist, as in some cases of Charcot-Marie-Tooth disease, in which arthrodesis of the ankles may be helpful. Some patients with posttraumatic or postantitoxin neuropathies involving the brachial plexus are helped by transplants of muscles and tendons, which result in a more useful upper extremity.

Finally, local involvement of a nerve by a tumor may be helped by neurosurgical measures. In some cases of neuropathy associated with malignant disease, treatment of the malignant process may result in some amelioration of the neuropathy, even when no local invasion of the nerve or nerves by the tumor has been demonstrated.

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Scalenus Anticus Syndrome

(Naffziger's syndrome; also Haven's syndrome)

This syndrome is characterized by pain in the wrist which progresses to the shoulder and is associated with pallor of the hands and wrists and a loss of the radial pulsation. It is attributed to compression of the subclavian artery by the scalenus anticus muscle. Naffziger referred to compression on the brachial plexus.

Relief of symptoms following severance of the scalenus tendon at its insertion or by resection of a portion of the muscle is usually obtained.

No man ever got nervous prostration pushing his business: You get it only when the business pushes you.—*Fra Elbertus*

To escape criticism: Do nothing, say nothing, be nothing.—*The Motto Book*

Topical Steroids in Anorectal Surgery

The use of steroids in the form of rectal suppositories may offer a valuable adjunct in the surgical treatment of anorectal conditions.

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The value of corticosteroids in anti-inflammatory and analgesic actions has been well documented in the literature.[1-2] The use of hydrocortisone or its analogues as applied to the skin or to the mucous membrane of the eye, nose, or the synovial membranes of joint cavities has been well established. Topical steroid therapy has been widely accepted and extensively used in inflammatory conditions. Sherman[3] in November, 1954, reported the topical applications of hydrocortisone in the treatment of factitial proctitis. Hertig[4] was the first to suggest the use of cortisone in this condition. The use of hydrocortisone in the treatment of factitial proctitis seems to be well established.

The use of hydrocortisone in suppository form for the treatment of acute hemorrhagic proctitis was reported by Truelove.[5] Hemorrhagic proctitis and proctosigmoiditis are synonymous terms referring to the same condition and are considered localized forms of ulcerative colitis. The value of hydrocortisone topically in the treatment of ulcerative colitis[6] is well documented in the literature. In July of 1955 Bonner[7] and his co-workers reported their observations made in a group of cases of urethral strictures which were treated by the local injection of hydrocortisone. The rationale for their methods was based on reports found in the literature, suggesting an inhibitory effect on fibroblastic proliferation by hydrocortisone in experimental animals as well as a possible lytic effect on scar tissue in humans with Peyronie's disease.

Schneider[8] in a recently published study found topical hydrocortisone to be useful in patients who had appreciable scar tissue formation at the anorectal line, with consequent painful defecation after anorectal surgical procedures. He found the use of topical hydrocortisone for twelve to thirty-seven days gave almost immediate relief, with good or fair improvement in the tissue in all forty-seven cases observed. In all instances the scar tissue was softened, pain was relieved, and other related symptoms were ameliorated.

Objects of the Present Study

The main object of the present study was to observe the use of a formula containing hydrocortisone acetate, 10 mgm. and other soothing ingredients (extract of belladonna, oxyiodide; bismuth subcarbonate, and balsam peru in an oleaginous base) in the form of a suppository in anorectal surgery. The first object of the study was to compare the healing period in patients using the suppositories containing hydrocortisone with patients who used no suppositories. The second object of the study was to compare the number of days of hospitalization in patients using suppositories with hydrocortisone with patients who used no suppositories. The third object of the study was to compare the number of post-operative visits to the office in the two groups of patients. Similar observations were made and studied in a smaller group of patients who used a formula which did not contain hydrocortisone.

Method

This study is based on observations of the author during the healing period and on information derived from the patient's history in the hospital and in the clinic during the post-operative period. The patients were divided into three groups, the one group being patients who received no suppositories, the second being the patients who used the suppositories containing hydrocortisone (in two types of base, one containing a processed wax trial formula and the other* cocoa butter and beeswax), and the third group being the patients using suppositories containing no hydrocortisone.** The surgery was all done by the author and in most instances consisted of hemorrhoidectomy of internal and external hemorrhoids. The anesthesia used in most cases was spinal or caudal. The patients are all operated in the Kraske prone position.

The method of hemorrhoidectomy is described to clarify the study: The hemorrhoidal groups are excised through the Fansler operating anoscope. The mucosa is approximated with locking sutures of chromic catgut from above the internal hemorrhoid to the approximate level of the dentate line. The anoderm is not approximated and the external hemorrhoidal wounds are not closed. This affords an open wound, the duration of healing of which can be observed. At the completion of the surgery a soft penrose drain without a wick is inserted into the anal canal and on into the rectum. Cotton oxycel is used in the anal canal, strips of which are placed in each anal wound. A gauze dressing is then applied over the cotton oxycel and the penrose drain. Hot wet packs are used the afternoon of the day of the surgery and in the evening. The next morning hot packs are again reapplied. At approximately late morning, the penrose drain and cotton oxycel packing are removed. Warm sitz baths are started in the afternoon of the first post-operative day and are used twice daily or more often if necessary. In cases where suppositories were used the suppositories were inserted morning and evening beginning the second post-operative day following surgery in the hospital and continuing through the healing period as the patients were observed on an out-patient status.

On the evening of the second day a warm oil retention enema is given to the patient. If bowel function is not established spontaneously by the morning of the third day a prepared type enema is given to the patient. A bulk producing laxative preparation is started on the first post-operative day. As soon as the patient is having spontaneous bowel function without the aid of enemas the patient is allowed to leave the hospital. The patient is then seen in the office at regular intervals. While the patient is in the hospital the anal wounds are cleaned meticulously with cotton tipped applicators each day. This is done by the surgeon and at each successive visit after the patient leaves the hospital this procedure is repeated. The use of the applicators in cleaning out the wounds of the anal canal and external anal

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*Wyanoids HC
**Wyanoids

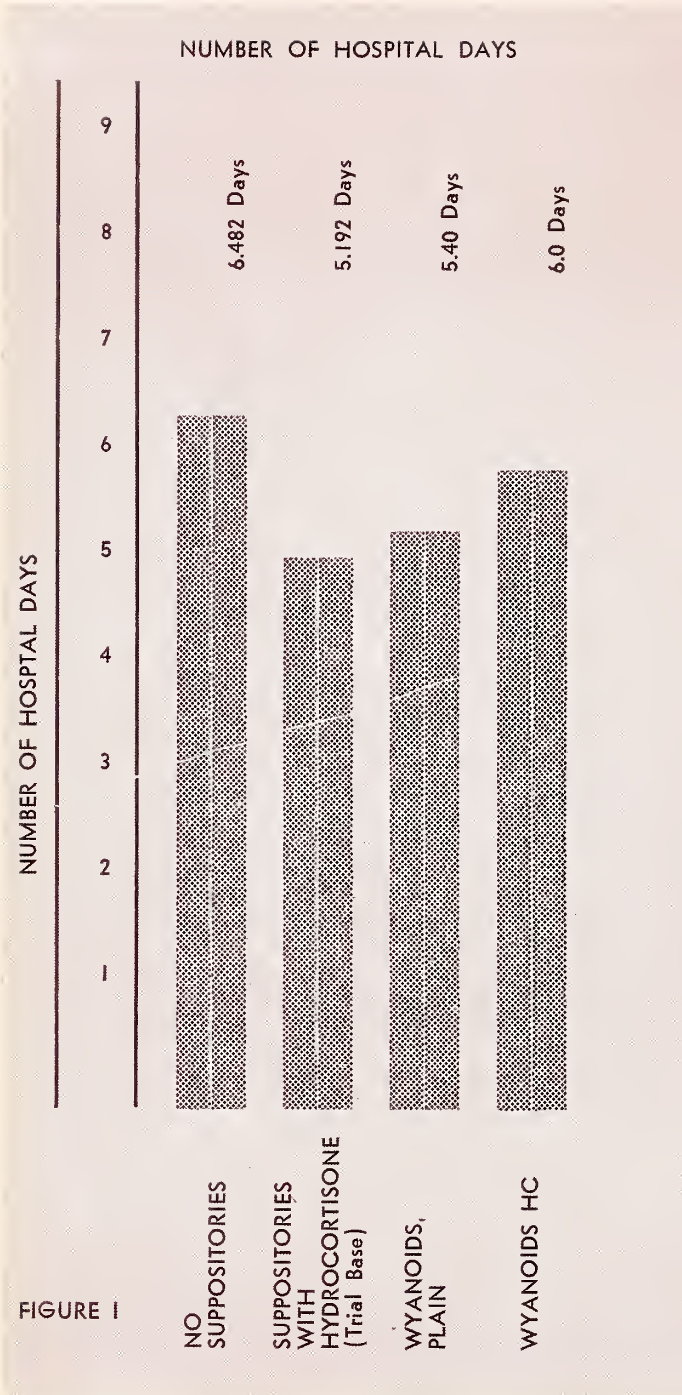

FIGURE 1

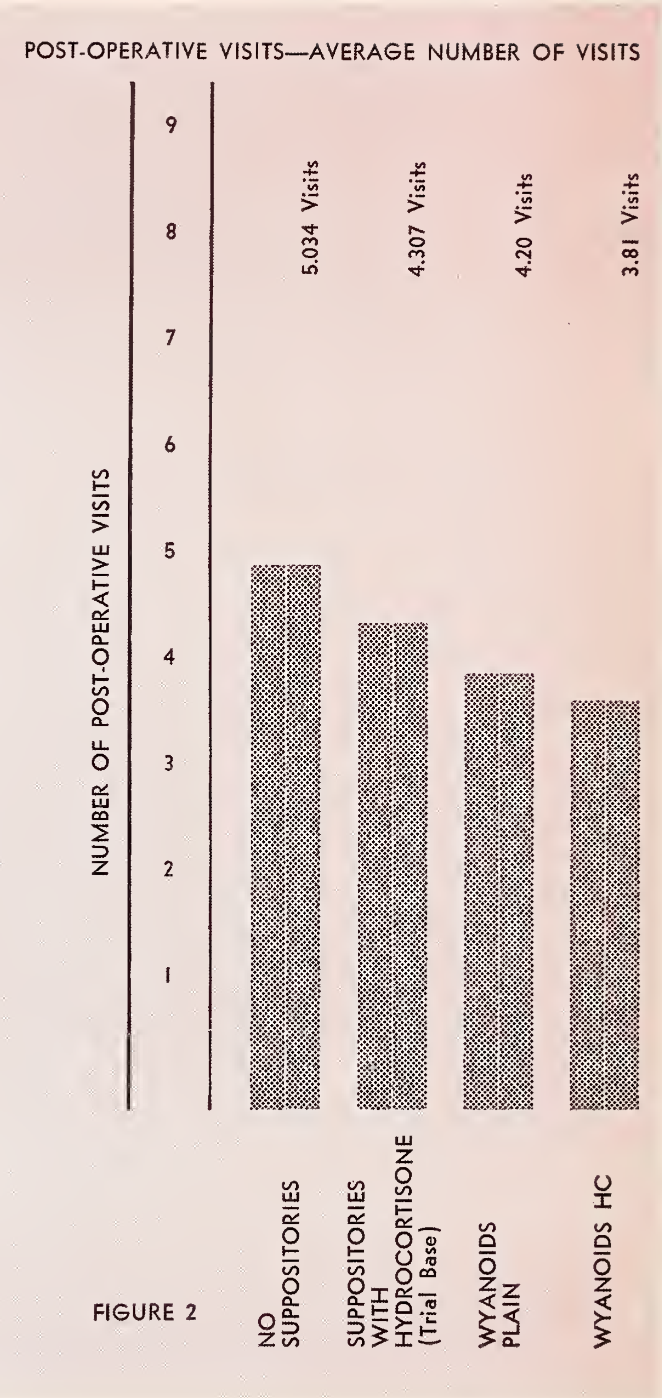

FIGURE 2

area is considered important in the post-operative care of the patient. Digital examination is not done until approximately 10 to 14 days after surgery. In most instances only one digital examination is necessary.

Results

The observations and results submitted in this paper are based on the observation of seventy-six patients operated by the author at the St. Olaf Hospital in Austin, Minnesota. Twenty-nine patients received no suppositories in the post-operative period. Thirty-seven patients used rectal suppositories containing 10 mgm. of hydrocortisone. Ten patients used suppositories which did not contain hydrocortisone.

The patients ranged in age from 21 years to the advanced age of 88 years. The term "healed" used in this study was the date of which complete epithelialization had occurred in all wounds. It was observed that the wounds of the anal canal would frequently be completely healed several days prior to the complete healing of the external wounds. The reduction of swelling, edema, and congestion was observed to occur at an earlier date in the patients using suppositories containing hydrocortisone. This reduction of swelling, edema, and congestion would appear to be the significant factor in the epithelialization which was observed to occur most rapidly in the healing of the wounds of the anal canal from about the tenth to the fifteenth day post-operatively.

In Figure 1 the average number of days in the hospital for each group is shown graphically. It would appear from this that the period of hospitalization can be reduced effectively by the use of suppositories. Figure 2 shows, graphically, the average number of post-operative visits to the office. As one might suspect with a comparable healing period there was no significant difference between the groups using cortisone and the group using the plain suppositories. In Figure 3 the reduction of the healing period when suppositories are used is illustrated; the hydrocortisone was more effective in the cocoa butter base. In the personal communication with Henry C. Schneider[9] the suggestion was made that an increased dosage of hydrocortisone such as 20 mgm. might be beneficial. The author concurs in this opinion but has continued to use the suppositories containing hydrocortisone, 10 mgm. with gratifying results in all anorectal surgery.

It is admittedly difficult to evaluate the use of suppositories in anorectal surgery; however, the observation of the "open wound" affords an opportunity to establish the point at which a given case is healed.

During this study the patients were all private and no attempt was made to make them aware of the fact the study was being conducted. The author attempted to remain completely objective in his observations of these cases. In some patients which were observed the case was eliminated from the study because the patient did not return a sufficient number of times or cooperate in the care in order that proper evaluation of the case could be made. Very little patient objection was met to the use of suppositories even in the early post-operative period. In most instances the initial suppository was inserted by the surgeon. The patient was instructed how to do this and was able to insert the suppository with a minimum of discomfort.

The possibility of systemic absorption of hydrocortisone was considered. Due to the relatively short period of time that the patient is using the hydrocortisone, that is, three to four weeks at the most, the danger of absorption would appear to be minimal. Sherman[3] in his study of the

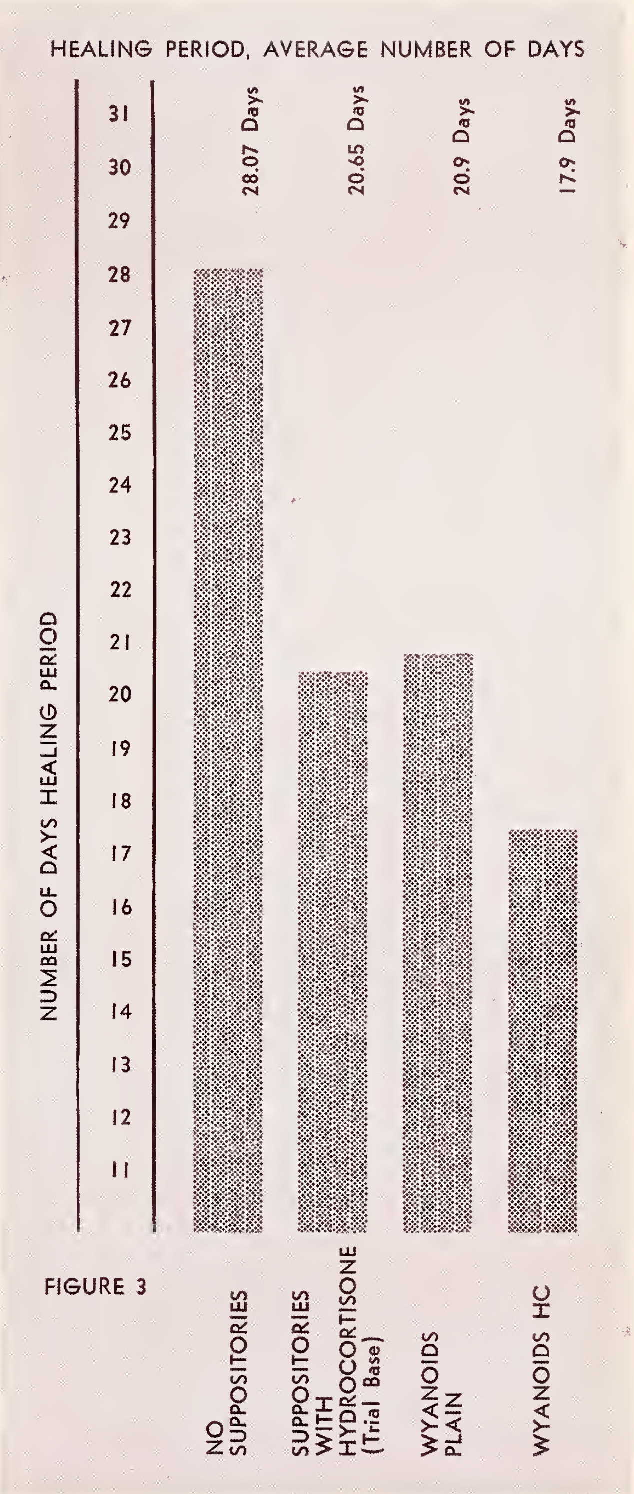

FIGURE 3

factitial proctitis problem made a study of three patients who were followed with eosinophil counts and 17 Keto-steroid urinary excretion studies. He found that there was no appreciable absorption into the blood stream by the administration of 75 mgm. of hydrocortisone, rectally, twice daily. The use of hydrocortisone suppositories would, therefore, appear to be of no danger as far as systemic absorption is concerned.

Summary

Seventy-six cases of anorectal surgery consisting primarily of complete hemorrhoidectomy are presented in which the length of hospitalization, the number of post-operative visits, and the length of the healing period of the anal wounds are studied.

Observations were made on three groups of cases: a group that received no suppositories, a group that received suppositories containing 10 mgm. of hydrocortisone, and a smaller group that received suppositories containing no hydrocortisone.

The reduction of swelling, edema, and congestion with resultant decrease in the healing period when suppositories containing 10 mgm. of hydrocortisone are used is considered significant.

The possibility of increasing the amount of hydrocortisone to 20 mgm. in the suppositories is suggested. It is hoped that other workers will be stimulated to study the effect of hydrocortisone as used topically in anorectal surgery.

All suppositories were generously supplied by Wyeth Laboratories of Philadelphia, Pennsylvania. The author acknowledges the technical assistance and cooperation of William R. Murphy, Wyeth Clinical Associate, Rochester, Minnesota.

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HEALTH INSURANCE BENEFITS AVERAGE $8.5 MILLION A DAY IN 1960

The American public received an average of more than $8.5 million a day in health insurance benefits from insurance companies during the first nine months of 1960, reports the Health Insurance Institute.

This was an increase of better than $500,000 a day over the average daily benefit payments made by insurance companies in 1959.

Health insurance benefits by insurance companies totaled $2,342,437,000 for the first three-quarters of 1960, a boost of eight per cent over the $2,168,476,000 paid out in the same period of 1959, said the HII.

In all of 1959, a grand total of $5.2 billion in benefits were paid by insurance companies, Blue Cross-Blue Shield and other health care plans. More than $2.8 billion of these benefits came from insurance companies, including $838 million to persons covered by policies which replace income lost through disability.

At the end of last year, nearly 128 million Americans had some form of health insurance protection including more than 75 million persons covered by insurance companies.

So far in 1960, benefit payments by insurance companies are running ahead of last year.

Effects of DECELERATION in Man on Plasma 17–Hydroxycorticosteroids

Rarely has it been possible to study the reactions of the adrenal cortex of the human during episodes such as a car crash. An unusual opportunity permitted evaluating blood 17-hydroxycorticosteroids in a healthy young male subjected to extremely rapid deceleration. The finding of a limited adrenal cortical reaction is of interest.

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With the aim of improving automotive safety, Professor James J. Ryan, Department of Mechanical Engineering, University of Minnesota, conducted several experiments on human volunteers; in these tests he examined the merits of a new seat-belt design in connection with a collapsible steering column.[1-4] Thus the opportunity arose to make a spotcheck on plasma 17-hydroxycorticosteroid levels in a healthy man during a period following rapid deceleration. After description of the conditions and some sequelae of the tests the results will be given.

The findings reveal a relatively limited adrenal cortical reaction to a combination of emotional and mechanical stimuli not usually amenable to study in man. The data gain further interest since they describe an unusually experienced athlete, but this same aspect limits, of course, generalizations to a human population at large.

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The Experimental Apparatus

The testing device consists of the seat of an automobile mounted on a sled. The sled, provided with a hydraulic bumper—proposed for installation in automobiles at a later stage—can be shot by high-pressure air against a wall.

The test subject sits behind a padded steering wheel which moves in its axial direction when subjected to a force (telescopic design). He is strapped to the simulated automobile-seat with a belt. The ends of this seat-belt are connected to a yoke behind the seat. The yoke is fastened to a rod connected with a piston enclosed in a cylinder.

At the moment of impact, a fluid is pressed from the hydraulic bumper through a pipe into this cylinder, pushing the piston backwards and thereby tightening the test subject to the seat. This restricts the motion of the individual relative to the sled and should avoid collision of the body with the dashboard, windshield, or other parts of an automobile. The tightening of the seat-belt is made dependent upon the strength of the impact. It can be adjusted by a by-pass valve in the hydraulic mechanism.

Test Subject

One of us (P.S.) served as test subject in two experiments in the laboratory of Mechanical Engineering at the University of Minnesota. At the time of the tests, this physically fit male subject was 34 years of age, 6 foot & ½ inches in height, and weighed 178 pounds. Previous injuries of this individual include: fracture of left ulna (infantry bullet), lacerations about the face and concussion suffered in action during World War II, fracture of left internal malleolus, rib fractures, sport accidents including an additional concussion, several rib fractures and a lung injury resulting in a pneumothorax, during the course of the Antarctic expedition in 1957.

Subjective Observations

Approximately ½ hour before the first test run, the subject was strapped to the seat. He wore a crash helmet with a face guard and a rubber pad on the chest underneath his shirt. He was apprehensive for several minutes before the test. His pulse rate was approximately 90 per minute, but it might have increased considerably immediately prior to "launching." He was perspiring profusely, yet this he ascribed to the high room-temperature caused by numerous photo flood-lamps.

Speed 20 Mph.

At the moment of launching, the subject was pressed against the seat rest by the rapid acceleration. He reportedly kept his eyes open facing the wall in front of him, yet he could not clearly recognize details when approaching the wall; apparently, the accommodation of his pupils was not sufficiently fast. Impact occurred approximately one second after launching. He felt the tightening of the seat belt; the upper part of his body was thrown forward; his chest hit the steering wheel. His head turned further forward until the face guard of the crash helmet hit the steering column. Then the upper part of the body and head turned backwards to an upright position. The movements of the head stopped when it hit the headrest.

Immediately after impact, the subject felt sudden sharp pain in the vicinity of his urinary bladder. This pelvic pain subsided after 2 hours. He also experienced great pain in the rest of his abdomen, particularly the rectum. These pains vanished after approximately five minutes.

A slight disturbance of his sense of balance and a pressure in his eardrums was probably due to the sudden forward acceleration of his head and possibly resulted from the impact of his face guard against the steering column. His sensations reminded him of those experienced previously, in rapid descent by plane. These symptoms faded within two hours after the test. The pelvic skin was bruised. On the day following the test, he had some pain in his neck; this pain increased on the second day after the test but disappeared by the fourth day. One hour after the test the subject pursued his habitual daily ½-hr "workout" in the gymnasium and also swam for 20 minutes. He did so without apparent physical or mental ill effects from the test experience, except for the slight pressure in the eardrums and slight abdominal pain described above. He ascribed this abdominal pain to the pressure exerted by the seat-belt against his abdomen at the moment of the impact.

Speed 25 Mph.

In an attempt to avoid the abdominal pain experienced after impact in the first run, extensive padding was provided around the pelvic bones in the second test. This padding was intended to transfer the forces acting during the impact from the abdomen to the pelvic bones. Again, the subject wore a crash helmet with a face guard and a rubber pad in front of his chest.

Since the forces and the decelerations during impact are proportional to the kinetic energy of the sled, (i.e. to the square of the velocity), and, since the second run was at 25 Mph rather than at 20 Mph, a greater risk seemed to be associated with this test. Consequently, the subject was strongly apprehensive prior to test No. 2.

While he believed that the design of the apparatus excluded any serious injury, he was somewhat afraid of possibly impeding his physical and mental fitness at least for some time after the test. Except for greater anxiety, his sensations and pulse rate before launching were similar to those of the pretest period of the first run. The subject exhaled deeply at the moment of launching.

As anticipated, the impact of the second test was much stronger than that of the first, the kinetic energy involved being over 50% higher. The first symptom noticed immediately after impact was a strong headache in the vicinity of the temples. This vanished, however, approximately three to five minutes after impact.

Corresponding to the stronger impact, the tightening of the seat-belt in this second run was greater than during the first test—a characteristic of the experimental design noted earlier. However, due to the padding provided above the pelvic bones, the force exerted by the seat-belt was transferred to the pelvis. Accordingly, the abdominal pain so prominent during the first test, was not experienced during the second. The pressure against the pelvic bones, however, was so strong that the subject felt the need for the immediate removal of the seat-belt. A strong pain in the groin persisted for the rest of the second test-day, impeding somewhat the subject's fitness, including his ability to walk and particularly to climb stairs.

After the second run, the skin of the groin was bruised much more than after the first. Bruises remained noticeable for several days after the test. During the day following the second run the pain in the groin diminished. A slight stiffness of the neck prevailed for a few days just as it did after the first test. For two days following the second test the subject also had a sudden onset of headache when taking a cold shower or during momentary physical strain from running or swimming. It took approximately one hour after the second test before he felt again physically relaxed and comfortable. After the first test run at 20 mph, such subjective aspects of recovery had taken only a few minutes.

Plasma 17-hydroxycorticosteroids (17-OH)

Before discussing the results of spotchecks on adrenal function after impact, it appears essential to comment briefly on the background against which such data can be viewed.

It is a time-honored custom in medical research to compare values obtained for a given physiologic function, studied under certain unusual conditions, with the reference standard of a so-called normal range of values. The latter range usually is not qualified as to its temporal parameters. Yet without regard for rhythms one's interpretations will be limited to a statement indicating whether or not the findings in a test-situation exceed the boundaries of physiologic variation.[5,6] According to this view, physiologic variations, such as rhythms, are tacitly viewed as unpredictable. The common use of the adjective **coincidental** as an exact synonym for **physiological** (in descriptions of the extent of normal change) constitutes a tacit admittance of defeat in analyzing the ways and means of body function in everyday life and in the absence of superimposed unusual stimuli.

In recent years, however, it has become abundantly clear that sole reliance on this practice is not only highly questionable but unwarranted. For adrenal function, including the 17-OH levels of human plasma, two observations seem to be established. There is, first, a circadian/(circa, dies)[5,6]/periodic change of great extent found by many investigators (for review see[7] and, second, this adrenal cycle is preparatory for each day's activity rather than a mere and direct reaction to unusual stimuli.[8,9] In diurnally active man, the 11-oxycorticosteroid rise starts by night during undisturbed sleep,[10] [11,12], while in nocturnally active rodents, kept in light by day, adrenal activation occurs during the diurnal rest period.[13,18]

This integrative cycle of the gland, however, is modulated by the well-known reactive adrenal cortical hormone output, following an organism's

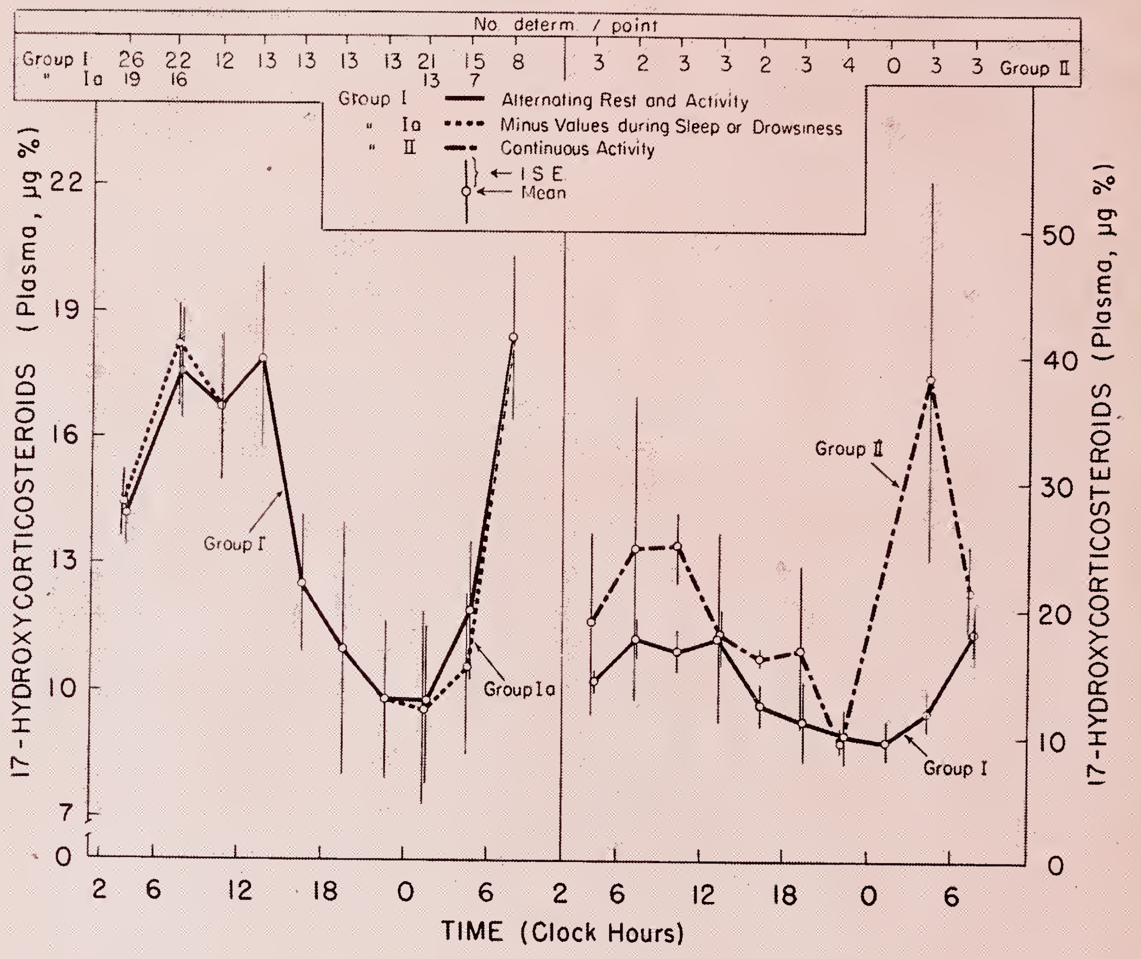

Figure 1.
Time course of adrenal cycle in normal mature human males (ref. 10), shown for comparison with data in Table I.

Group I subjects, on a schedule of diurnal activity and nocturnal rest and sleep (N = 13). Group II subjects active by day and by night, without sleep (N = 3). Group I curve is the same in both halves of Figure; ordinates show different scales for the plasma 17-hydroxycorticoid (17-OH) value.

Comparison of Table I values with the curve in Figure 1 suggests that "crash-forces" analyzed and/or the emotional build-up prior to and during test had elevated 17-OH levels to the peak values of rhythm on a normal day (cf. Group I) but probably not to peak values encountered in Group II subjects.

Table I

ADRENAL CORTICAL HORMONE LEVELS IN ATHLETE SUBJECTED TO RAPID DECELERATION

Time After Impact	Clock Hour	17-Hydroxycorticosteroids Plasma, µg%
15'	2:45 p.m.	18.4
30'	3:00 p.m.	13.0
105'	4:15 p.m.	20.0
	Summary	
Mean I	(Post-Impact) ±SE	17.1 ± 3.7
Mean II	(Control day: appropriate circadian system-phase; N = 2)	8.7
Mean III	(Control day: N = 6; Δt = 4 hrs.)	12.6 ± 1.7

exposure to a variety of stimuli, emotional, mechanical and other (19).

While changes in plasma 17-OH are generally accepted as an index of adrenal cortical reactivity, it must be kept in mind (in view of the evidence cited above) that spontaneous changes in hormone level are integrative as well as adaptive. The time course of these steroid hormone levels along a 24-hour scale determined under conditions of routine-synchronized periodicity analysis may be viewed with this in mind from the curve in Figure 1, describing male medical school staff, 18 to 35 years of age (10). Insofar as these subjects had no known disease, they are comparable to the individual reported upon herein, although they can not match his unusual, notably athletic background.

The curve of the test subject, on a single uneventful day, also has been determined, about one month after Test II. As may be seen from Figure 2, his profile involving plasma 17-OH determinations at 4-hr intervals for a 24-hr period, is roughly in agreement with the limits depicted in Figure 1. Yet Figure 2 does not take into account variations from day to day in a given subject, while the group-profile, shown in Figure 1, does so to some extent. Thus according to considerations similar to ergodic theory in statistical mechanics (20, cf also 8), the ensemble profile of *n* individuals studied over one or a few cycles may serve to approximate the behavior of a given individual over *n* cycles. This view presumes, of course, stationarity. It ignores the occurrence of longer-term physiologic changes, e.g. with the seasons, as well as age trends. But it might serve as a first approximation, and only as such does the curve in Figure 1 provide an estimate of the rhythm in the test subject, as it might have behaved in the absence of effects from the antecedents of the experiment and from the test itself.

Adrenal Function After Impact

With this qualifying restriction in mind, one might view the data from three spotchecks on blood withdrawn at 15, 30, and 105 minutes after impact, in Table I. At these time-points after the test, 17-OH values, determined according to Wu and Mason (21), correspond, perhaps, to normal peak-values but they are not significantly elevated above the range depicted by the curve in Figures 1 (10) or by many other curves published earlier by others. (10, 21-24)

A significant elevation in hormone level might have occurred at time-points between those selected for the spotchecks. If so, such a rise must have been of relatively short duration. Elevations of 17-OH to values higher than those shown by the recorded results might also have taken place outside the period bracketed by the spotchecks. At any rate, the value at 15′ after impact at 2:45 p.m., is 18.4 μg % and it is about the same as a value of 18.1 μg %, the peak 17-OH level found in this same diurnally active subject on an uneventful day at 6:30 a.m.

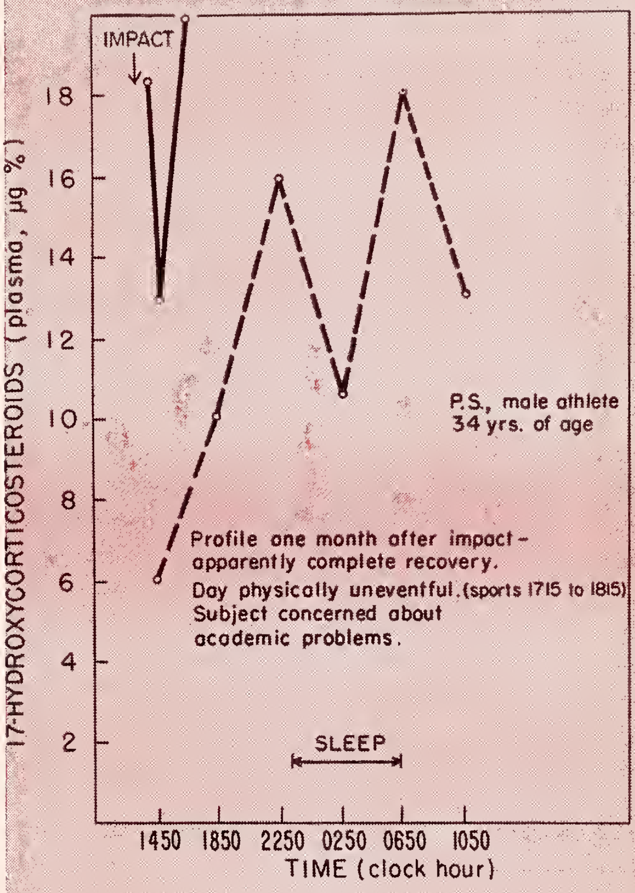

Fig. 1.
Adrenal hormone levels of test subject after impact (continuous line) and on a physically uneventful day (broken line). Note peak of broken reference curve at 06:50, before subject starts daily activity (see text).

The highest value after impact is recorded at 105′ after the test; it is 20 μg %, while the mean of all 3 post-impact values is 17.1. These values then correspond roughly to the peak value of the circadian plasma 17-OH rhythm anticipated and recorded for this subject on an uneventful day.

Adrenal Function Post Impact

The post-impact values, Mean I in Table I, can be compared further with values at 2:50 p.m. and at 6:50 p.m., obtained from the same subject on an uneventful day: 6.2 μg % and 11.2 μg % is significant at the 1 per cent level. There Mean II, in Table I is 8.7. The standard error of the mean of 6 observations, Mean III in Table I, was used, in turn, in a test of the difference between Means I and II. The difference of 8.4 μg %, respectively. The mean of the latter, remains little doubt that the post-impact mean is (a) higher than the values expected at the circadian system phase chosen for study, i.e., the descending phase of the 17-OH rhythm, while it is (b) not higher than the value associated with the circadian peak of the 17-OH rhythm.

Unfortunately, pre-test values are not available. Since the subject was apprehensive prior to testing, and in view of the well-known effects of anxiety upon the adrenal cortex, it is presumed that such values were elevated for non-mechanical reasons.

At least on subjective grounds, it is presumed further that cortical adrenal stimulation by anxiety was much greater on the day preceding the test, as compared to the period immediately following impact. This circumstance of prior emotional stimulation must also be considered in viewing the results of this study, i.e., the significant yet relatively limited response to a rare test-situation. It is with these qualifications that the Table I data bear upon the hitherto apparently unexplored behavior of human plasma 17-OH after rapid deceleration, preceded, in its turn, by fast acceleration.

The main problem explored herein is indeed the effect, if any, of a particular physical trauma rather than that of the doubtlessly associated emotional experience. The difficulties of segregating these two intimately related facets of physiology notwithstanding, a simple problem has now been documented. The question whether rapid deceleration from a speed of 25 MPH entails an immediate yet lasting elevation of 17-OH levels, which exceeds the peak-values of the circadian physiologic adrenal cycle, has been answered in the negative, for the subject studied. These values after deceleration are elevated, however, when they are compared with the values expected normally in the circadian-phase during which the testing is done, i.e., the descending phase of 17-OH rhythm in human blood.

Admittedly, the emotional and physical components of this limited cortical response remain confounded. The same difficulty would have applied to an unusual elevation of 17-OH exceeding the upper 17-OH limit defined by periodicity analysis, if it had occurred. It did not occur. Thus, the lack of a rise of 17-OH levels above the circadian peak can serve to suggest that cortical adrenal activation from the particular physical trauma studied was limited to a physiologic extent and while significant it was not obviously harmful.

The most plausible effect of the trauma and/or the associated emotional experience is a phase-shift of circadian rhythm following rapid deceleraton. Rapid deceleration in man probably interacts with short periods, several hours in length, that are normally superimposed upon the integrative circadian rhythm of the adrenal cortex. The results of the three spotchecks in Table I, although they do not suffice to prove this suggestion, are consistent with an accleration and an increase in amplitude of the shorter-than-circadian adrenal cortical periodicity.[25]

At any rate, it can be suggested that during a period extending from 15 minutes to 105 minutes after rapid deceleration, the 17-OH level was significantly elevated but it did not exceed normal peak-levels in an unusually fit male test-subject. Further generalization would exceed the scope of these data.

Summary and Conclusion

In the course of two tests done for improving automotive safety, an athletic human male, 34 years of age, was subjected first to rapid acceleration, followed by prompt deceleration. Observations made in the course of these two experiments are described as the background for spotchecks of 17-hydroxycorticosteroid levels in his plasma.

While a discussion of automotive safety as such is beyond the scope of this paper, the authors cannot refrain from alluding to the extreme usefulness of a safety-belt and other protective devices, in the particular situation tested.

Three hormone determinations were made in one of the tests, at 15, 30, and 105 minutes, after the subject, protected by safety belt, crash-helmet and padding, was shot against a wall at 25 MPH. These plasma 17-hydroxycorticosteroid values seem significantly elevated, when they are compared with the mean values expected at corresponding times, when a two-fold standard of comparison is used. This reference standard is derived, on the one hand, from a group of healthy males of roughly comparable ages, and with a similar mode of life — activity by day alternating with rest by night. On the other hand, a 24-hr profile on the same subject on an uneventful day also is made available for comparison. Statistical considerations support the significance of the elevation here recorded after impact — when it is evaluated against a temporal reference standard. It seems methodologically important to note that such an elevation would remain undetected by the student of "homeostasis" — interested only in deviations from a normal range, unqualified as to time. By periodicity analysis, then, a negative result can become a positive one.

It is further pertinent, however, that none of the three values after impact exceeds the hormone levels encountered normally in a population of adult healthy male subjects at the peak-time of circadian rhythm.

In considering the conditions of the simulated automobile accident, notably the dramatic factor of rapid deceleration, it seems fair to suggest that obvious injuries from the trauma tested were relatively negligible and that cortical adrenal stimulation by the mechanical insult took place, but after impact its mechanical component was not excessive.

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INJURIES KILL

In the United States 12,000 children are killed annually and 45,000 are crippled. This is the leading cause of death of children over the age of 1. Adults are usually responsible. Automobile accidents — 46%; drownings — 16%; burns — 16%.

Accidents occur more often to overactive, restless, impulsive, unpopular, resentful, hostile, immature children and those without parental supervision. — Compleat Pediatrician Duke Press

Chronic INTUSSUSCEPTION due to Lymphosarcoma of the Ileum

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INTUSSUSCEPTION in the adult in contradistinction to that of the infant, although not a frequent disease, is usually associated with an intrinsic lesion located in the intussusceptum. Roper[1] surveyed the English and American literature up to 1956 and found 801 cases. Sanders et al[2] listed 1252. It was suggested that any general hospital providing 100 beds or more should expect to have one case of intussusception occurring every twelve to eighteen months.

Case Report

A 15 year old well nourished, well developed boy was first seen on December 3, 1960, complaining of exertional dyspnea. He was inclined to think this was due to nasal obstruction. He had no other complaints. There had been no weight loss. A left nephrectomy had been done in September 1953 for a non-functioning, congenital hydronephrotic kidney.

Physical examination indicated that the boy was pale but was not acutely ill. There was no nasal obstruction. Chest and lungs were normal. There were no abnormal findings in examination of the abdomen. Hemoglobin was found to be 7.1 grams. White blood cell count and differential were normal. Urinalysis was negative. Bone marrow studies revealed slight hypoplasia. After oral hematinic medication for two months the hemoglobin was 10 grams.

One month after the first observation he complained of cramping, intermittent abdominal pain which was usually associated with eating. There was no melena and no hematemesis. Gastrointestinal x-ray examination revealed pylorospasm and irritability of the duodenal cap. In the mid-portion of the transverse-colon there was a concave defect characteristic of advanced enterocolic intussusception.

A laparotomy was performed and the intussusception reduced. The proximal portion of the intussuscipiens was found to be composed of a lobulated, annular tumor. A right hemicolectomy and removal of the distal 14 inches of ileum was performed with end-to-side anastomosis. The pathologist reported a 6½ cm. circular tumor mass involving the distal ileum 4 cm. proximal to the ileo-cecal valve. At the leading edge of this tumor was a 3½ cm. polyp attached by a ½ cm. stalk. This tumor mass was found to be a lymphosarcoma; one lymph node out of 14 was found to contain tumor tissue.

Comment

Intussusception in the adult differs from that usually found in infancy in that 80% of adults have this disease associated with specific organic lesions, whereas only 5% of younger patients have organic lesions. Meckel's diverticulum is the most common organic lesion found in children. Benign polyps and reduplication of the bowel are other etiologic factors in the infant.[2] Sanders, referring to the figures of Donhauser and Kelly, lists the etiological factor in the adult as being benign in 44%, malignant in 26%, and unknown in 30%.

Large bowel intussusception in the adult is initiated by a malignancy in 90% of cases. According to Roper the most common presenting complaint is anemia. Intermittent and recurring attacks of abdominal pain may be one of the important symptoms. The diagnosis is most readily established on the basis of the history of a patient with abdominal or rectal mass and the x-ray examination.

Keeley[3] lists as the most diagnostic sign the "coiled spring" sign, caused by the barium between the intussusceptum and the wall of the receiving bowel and the crescentric edge of barium at the obstruction.

Sanders has pointed out that all colonic intussusceptions in the adult should not be reduced because of the possibility of seeding from a malignant tumor which constitutes 68% of the colon cases. Roper[1] suggests the possibility of a transcecal inspection before making a surgical commitment to a wide resection.

Summary

A case of chronic intussusception secondary to lymphosarcoma of the terminal ileum is presented. Recurrent chronic anemia and recurrent abdominal pain were the major presenting symptoms.

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Self Dicipline

Since the days of Pythagoras it has been recognized that a world of law implies a life of self-discipline if that life is to reach its highest development. Thus in an era when many old conventions become outworn, the clear teaching of science is of especial value: If man will learn the truth and abide by it, that truth will make him free. — Arthur H. Compton

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The fallacy of infallibility may do more harm than good.

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Editorials

"BELL'S PATHOLOGY"

Tersely and precisely written, without verbiage, Bell's *Textbook of Pathology* was not an encyclopedia or a reference text, but it was a student's textbook. Now out of print, in need of some revision, it would be, if available, the best pathology textbook for the second year medical student. It contained all the information on pathology that a medical student needs to know, perhaps all he can be expected to assimilate. Moreover, the printing was large enough to be readable.

Bell's *Textbook of Pathology* was unique in integration, comprehensiveness and brevity. Its uniqueness was principally because it was authored—not edited—and its author, Dr. Elexious T. Bell, had one of the largest personal experiences in pathology of all writers in this field. Another edition would be welcome but because of his advancing age, Dr. E. T. Bell feels the task would be too great.

Now, after eight editions and many reprintings, Bell's *Textbook of Pathology* is gone from the bookstores[1] and the halls of the medical school. However, it will continue to retain a respected spot on the bookshelves of a generation of doctors and dentists who have learned pathology from it. Because it is no longer available, medical students will probably have to buy and study from two textbooks to gain the same information and degree of insight into pathology.

Warren J. Warwick, M.D.
University of Minn.
Pediatrics Dept.
Minneapolis, Minn.

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[1] Used copies of Bell's *Textbook of Pathology* are in high demand by medical students. The Mayo Medical Bookstore at the University will sell copies for the owner, gaining him 65% of the retail price of the *last* printing. Books may be left there or sent giving the owner's return address.

"Therapeutic Plenty"

Elsewhere in this issue of Minnesota Medicine is an article concerned with the problem of side effects attendant with the use of a particular therapeutic agent. The profession is indeed indebted to those physicians who diligently report the problems and failures of therapy as well as the successes.

The following abstract which appeared in the J. A. M. S. Vol. 179, No. 6 is reprinted here to further emphasize our responsibility in choosing therapeutic agents and methods.

> **The Physician's Responsibility in the Age of Therapeutic Plenty**—M. C. Sheps and A. P. Shapiro
>
> Circulation—Vol. 25:399 (Feb.) 1962
>
> The response of the medical profession to the problems and opportunities created by the plethora of potent new pharmacological agents is deficient in certain respects. New remedies are adopted rapidly, and apparently widely, at times in the face of poor or inadequate evidence. Many of these remedies, helpful or not, are not innocuous but produce unpleasant side effects, toxicity, and sometimes even death. The responsibility of the physician for the provision of rational and beneficial treatment would be discharged more adequately if (1) increased attention were given to the principles of clinical pharmacology in medical education; (2) individual physicians refused to prescribe a preparation before they were convinced, by a critical examination of published evidence, that this product is the best available therapy for the patient; (3) medical journals adopted more critical standards for the publication of clinical papers; (4) medical journals required that advertisements for pharmaceuticals cite references to published papers which support their claims; and (5) organized medicine adopted and enforced minimum standards to be met for the clinical trial of drugs.

Stuart W. Arhelger M. D.
Minneapolis, Minn.

Surg., 124: 857-878.

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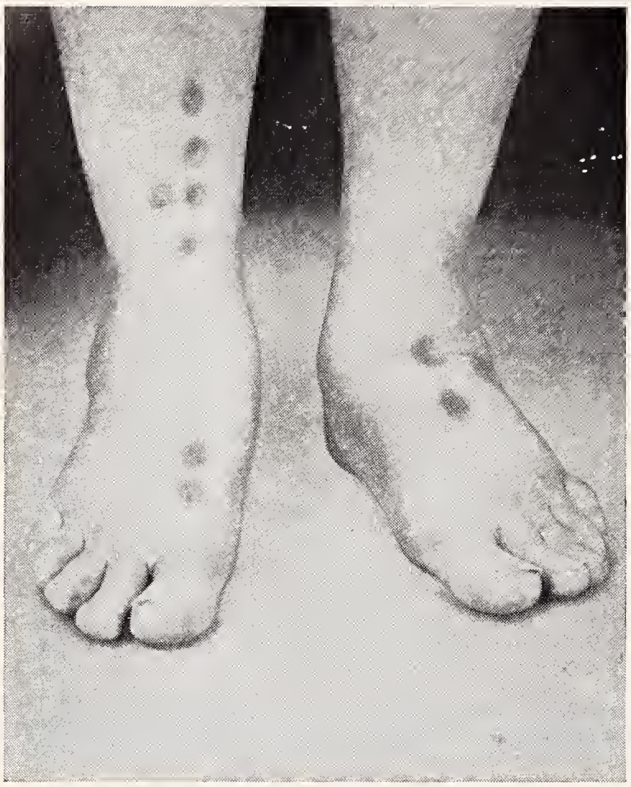

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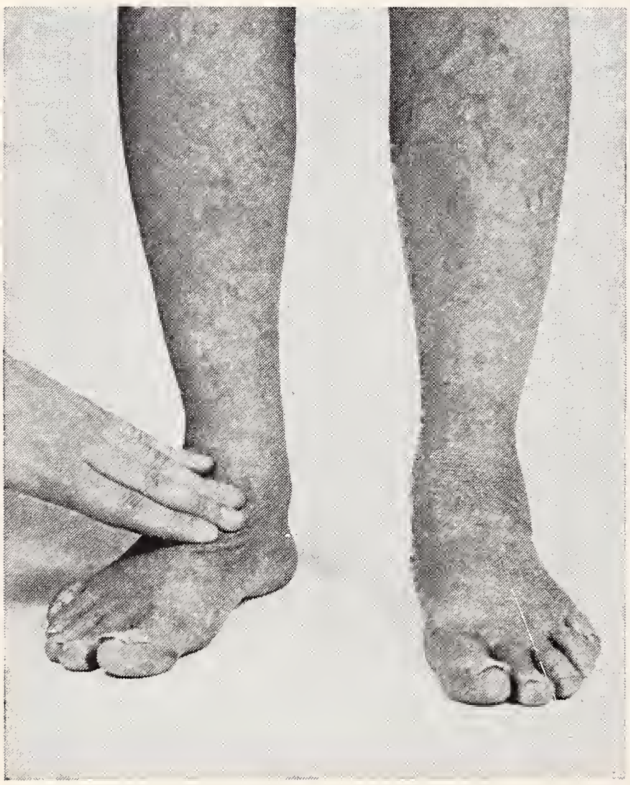

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Abstracts and Briefs

CARCINOMA OF THE LEFT COLON

The premise of the current study is that carcinomas of the left colon often spread to distant lymph node drainage areas in an unpredictable manner, and that the morbidity and mortality from left hemicolectomy are no greater than that of limited segmental resection. Therefore, hemicolectomy is the procedure of choice for carcinomas of the left colon and rectum.

The report records the study of 545 patients with carcinoma of the colon operated on in the period 1945 to 1955. The carcinoma involved the left colon or rectum in 359 of these patients. Instructive descriptions and diagrams of the lymph node drainage from various areas of the left colon are included. The technic of left hemicolectomy is described. Comparisons are made between results of segmental resections performed in the 1945 to 1950 period and hemicolectomy in the 1950 to 1955 period. Contrasting the groups of patients who had left hemicolectomy for lesions of the descending or sigmoid colon with those who had a segmental resection disclosed an increase in the five year survival rate for hemicolectomy patients of 13.8%. This increase is believed to be due to the extension of resection to include probable lymph node metastases along the inferior mesenteric artery, as well as the reduction in local recurrences at the site of anastomosis. The authors describe two changes in their technic which undoubtedly reduced the number of anastomotic recurrences. They attempted to resect at least ten centimeters of normal bowel distal to the lesion, and also irrigated the lumen of the remaining rectum to eliminate desquamated cancer cells. The extended resection for carcinoma of the recto-sigmoid showed an improvement in the five year survival rate of 5.1%, and the more radical procedure for carcinoma of the rectum led to an improvement of 6.9%.

There was a decrease in surgical mortality from 5.1% for segmental resections to 2.2% for the extended resection of hemicolectomy.

Many surgeons have continued to perform limited or segmental resections for carcinoma of the colon because they felt that the addition of hemicolectomy would increase the morbidity and mortality to the extent that any gain in survival rates would be nullified. Data supplied in the review by the Department of Surgery at Northwestern is ample evidence that a respectable increase in survivals can be obtained with no greater risk to the patient. Thus, in treatment of neoplasm of the colon segmental resections should be employed only for the extremely poor risk patient, palliative resections, and some instances of colon polyps.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"A Ten Year Study of Hemicolectomy in the Treatment of Carcinoma of the Left Half of the Colon" Rosi, P. A.; Cahill, W. J.; Carey, J.; S.G.&O. 114:15, January, 1962.

USE OF INTRALESIONAL INJECTIONS IN PSORIASIS

In a double blind study of 12 psoriatic patients the authors compared the effectiveness of intralesional injections of triamcinolone acetonide, prednisolone tertiary butyl acetate and hydrocortisone acetate in clearing psoriatic lesions. All patients were hospitalized and all other forms of therapy were avoided. The injections were given deep enough to avoid wheal formation but were shallow enough to produce a ballooning of the skin. The injections were given every 5 to 7 days and the results were evaluated 24 hours after the sixth injection.

The lesions injected with the triamcinolone acetonide cleared in from 5 to 16 days while the prednisolone tertiary butyl acetate injected sites showed a clearing about one-fifth the diameter of the site injected with triamcinolone. Clearing was not observed in the hydrocortisone acetate injected lesions. Following the intralesional injections the central clear areas were generally depressed below the surface.

The effectiveness of triamcinolone acetonide injections in clearing psoriatic lesions is recognized. The atrophy following the injections is almost a constant occurance but is often reversible.

A. S. Zelickson, M.D.
Minneapolis, Minn.

"The Intralesional Use of Triamcinolone Acetonide in Psoriasis" Hasegawa, J. and Livinston, W.; A.M.A. Arch. of Derm. 85:258, 1962.

ILEOSTOMY OUTPUT

The Proctology Department of Temple University Medical Center has been impressed with the benign postoperative course and gratifying rehabilitation of patients with properly constructed ileostomy, particularly when performed for severe ulcerative colitis. The studies presented document their impression that there need not be an alarming loss of fluid or electrolyte in such patients.

A series of twelve patients who had ileostomies was studied by collecting the dejecta from the stoma, and measuring the volume and the concentration of various chemical constituents. Seventy-six twenty-four hour specimens were analyzed from a group of patients with a newly established ileal stoma, and sixty-three were studied from a group of patients with a previously established stoma.

The volume figures show proportionately greater outputs associated with more extensive resections of the ileum, as has been previously noted. The authors emphasize that a properly constructed stoma will not produce an alarming volume of output, as has often been the case with older types of ileostomies.

The main cation in ileal dejecta is sodium. In this investigation fifty to ninety milliequivalents of sodium were excreted per day compared to a normal daily excretion in feces of five milliequivalents. This sug-

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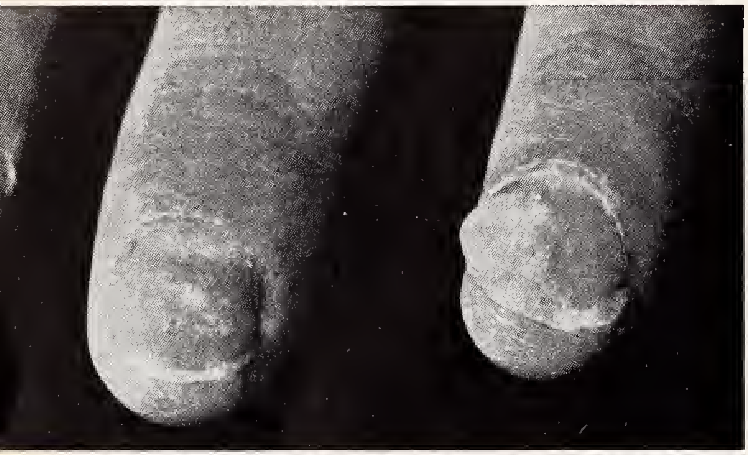

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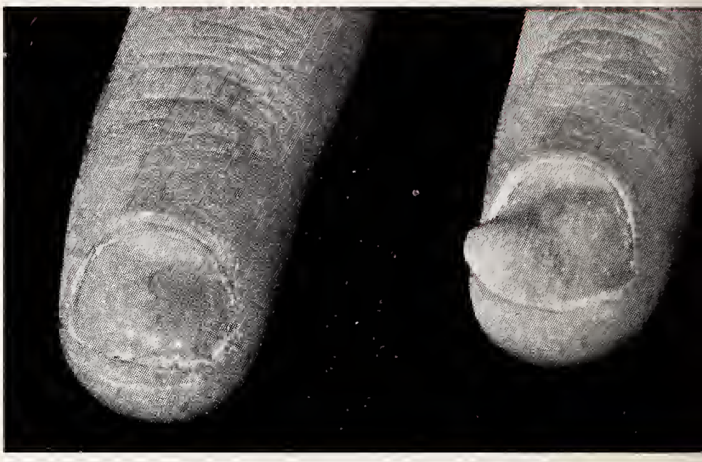

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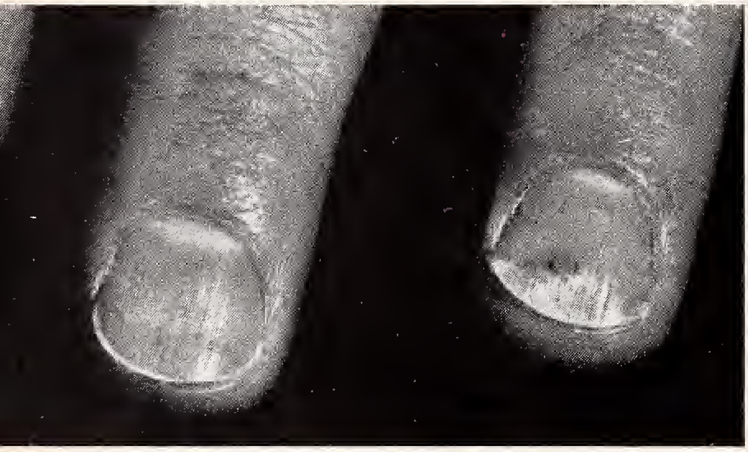

CASE HISTORY AND PHOTOGRAPHS OF PATIENT, COURTESY OF NORMAN ORENTREICH, M.D., NEW YORK, N.Y.

When Mr. R. Y. was first seen, three fingernails on his left hand showed thickening, opacity and brittleness. The patient also had well-defined erythematous plaques on the palms. Cultures of *Trichophyton rubrum* were obtained from scrapings. The patient was placed on FULVICIN, 250 mg. q.i.d., and a 2% salicylic acid cream. After four months, both nail and palmar involvement had cleared completely and all therapy was discontinued. The patient's hands were free of ringworm when examined one month after completion of the course of therapy with FULVICIN.

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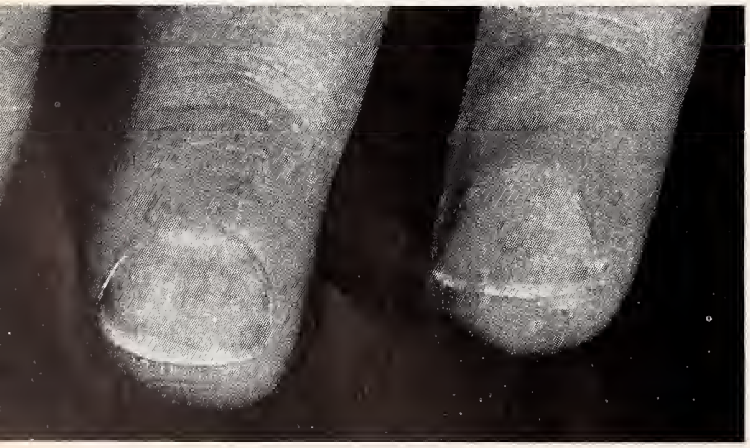
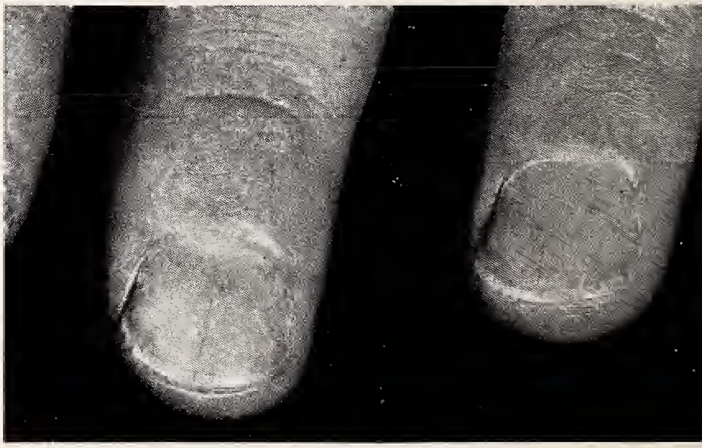


5 July 19, 1961 – four-week follow-up.



gests that absorption of sodium is one of the functions of the colon. There is little difference in the amount of potassium excreted normally in the feces and that excreted in ileal dejecta. An abnormal amount of chloride which would ordinarily be excreted in the urine also appears in the ileal discharge. Magnesium and calcium excretions were rather variable. Nitrogen loss was initially high, but the period of negative balance was similar to that of patients with other kinds of surgery. Compared to the large stool nitrogen losses of patients with ulcerative colitis, there is a great improvement. Any of these constituents may, of course, be lost in abnormal quantities should there be prolonged excessive fluid output from a malfunctioning stoma.

The conclusion the authors wish to emphasize is that the volume and chemical content of ileal discharges need not be abnormal enough to result in physiological disturbances. In their experience ileostomy has made possible rehabilitation of ninety-four percent of their patients.

In the past, and to a large extent in the present, ileostomy to many of us is a term which implies a miserable, last-resort alternative. Recent technical improvements in stoma construction as suggested by Brooke, Turnbull and others has changed the clinical aspects of this device. Malfunctioning stoma as a result of serositis and partial obstruction need not be a great problem. Unless extensive ileal resection is required, the proper application of this procedure should result in a gratifying rehabilitation of the patient debilitated from severe ulcerative colitis.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"An Investigation of the Volume of Output and Chemical Content of Ileal Discharges Following Total Colectomy and Ileostomy" Nuguid, T. P., Bacon, H. E. and Boutwell, J.; S. G. & O., 113:733, Dec., 1961.

ANTICOAGULANTS FOR THROMBO-EMBOLISM

A series of 511 patients, followed one to eleven years after diagnosis of venous thrombosis, was divided into two groups. One was comprised of those whose primary indication for anti-coagulant drugs was venous thrombosis, and a second group composed of those whose initial manifestation was pulmonary embolism. 31.8% of the patients developed sequelae of post-phlebitic type without original leg findings at the time of onset; 6.7% developed ulcers and 32% had persistent swelling, requiring the use of elastic bandages or stockings; 27% felt that the swelling interfered with their daily activities.

The two groups, compared one to the other, indicate a convincing decrease in the incidence of swelling and ulceration in the group having anti-coagulant therapy. These complications were present in about 40% of those treated without anti-coagulants and approximately 7% in the other group treated with anti-coagulants. Elastic support was needed in approximately 63% without anti-coagulants and 36% with this therapy.

Although this study was done by way of questionnaire, with loss to follow-up of approximately 60%, with 25% of the patients having died, the study at least exhibits valid evidence favoring anti-coagulant therapy in this problem.

J. H. Strickler, M.D.
Minneapolis, Minn.

"Thrombo-Embolism: Post Phlebitic Sequelae Following Treatment with Anti-coagulant Drug" Hodgson, P.; Coon, W. W.; Mackenzie, J. W.; Ann. Surg., 154:165, Dec., 1961.

ADRENALECTOMY FOR BREAST CANCER

It is now well established that certain disseminated breast cancers regress after adrenalectomy. The mechanism of this response is not known. Since some investigators have also described beneficial results from administration of cortisone or similar steroids, the question is raised as to whether the patients benefited by adrenalectomy may not actually be responding to the steroids which they then require. The authors believe that their studies indicate the adrenalectomy to be the favorable factor rather than the cortisone administration.

Over a one year period thirty-nine patients with metastatic breast cancer were studied and treated at Roswell Park Memorial Institute. All had been previously treated with androgens or estrogens. They were randomized as follows: Twenty patients received cortisone acetate and nineteen underwent bilateral adrenalectomy. Oophorectomy was not done in connection with the adrenalectomy. The hormone administration in the non-operated group simulated that required for preoperative preparation and postoperative maintenance in the adrenalectomized group.

The patients were carefully periodically observed with frequent examinations, measurements of accessible lesions, hematological and blood chemical studies, and X-rays for objective evidence of regression.

In the group receiving corticosteroid therapy alone no objective regression of metastatic disease was noted in any patient. Some of these failures subsequently underwent adrenalectomy with favorable response.

Forty-four percent of the patients treated with adrenalectomy had generalized regression of metastatic disease. In some instances the effect was profound and prolonged.

The conclusion is that the beneficial effects of bilateral adrenalectomy are, therefore, not due to the steroid substitution therapy.

Other pertinent features of endocrinological aspects of the treatment of metastatic breast carcinoma are also discussed. The discrepancies in evaluation of supplemental drug therapy or endocrine ablative therapy are often due to lack of uniformity in criteria of regression. The magnitude of regression and the duration of remission must be accurately known. There remains, of course, the difficulty that pre-operatively there is no good method to determine which patients will obtain a good response from the procedure.

The authors are to be commended for the objectivity of their study. All of us are certain to be confused by the lack of consistency in the reported results of hormonal alteration in the therapy of breast cancer. A very convincing case is presented for the value of adrenalectomy, however, and this procedure would apparently be of great value to a significant percent of afflicted women. It is unfortunate that we have no consistently good screening procedures to determine which candidates may be expected to have a favorable response to adrenal ablation.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"A Comparative Evaluation of Adrenalectomy and Cortisone in the Treatment of Advanced Mammary Carcinoma" Dao, T. L.; Tan, E.; and Brooks, V. Cancer, 14:1259, November-December, 1961

End

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Book Reviews

ACCIDENT SYNDROME — Morris S. Schulzinger, M. D. Charles C. Thomas, Publisher, 234 pages

Accident proneness may follow a pattern. Twenty per cent of a factory population may suffer 85% of all the accidents. The accident-prone individual may present a personality profile. He is apt to act upon the spur of the moment.

Chapter 4 contains most of the charts and tables showing a variety of accidents, types of accidents, sex and age incidence, and a multiplicity of other statistical figures.

There is a strong tendency to indicate that the accident syndrome is very often related with various types of psychological maladjustment.

This book makes interesting reading and it provides a considerable amount of information relative to individuals who suffer repeated accidents. It can be recommended to all physicians who are confronted with the problem of injuries.

Carl O. Rice M. D.
Minneapolis, Minn.

CLASSICS OF CARDIOLOGY (formerly titled: Cardiac Classics) by Fredrick A. Willius and Thomas E. Keys in two volumes. Paper back edition. Dover Publications, New York. $2.00 each volume.

Every student some time between his matriculation into medical school and his ordination into the physicians' ranks must come to grips with the insoluble problem represented by the replete medical library. There gathered in thousands of closed books lies the wisdom of his predecessors. These two books, at least for one field of medicine, provide him with the keys that will unlock those precious volumes which contain the quintessence of medical history. CLASSICS OF CARDIOLOGY are to be read for the sheer pleasure of sharing the excitement of discovery, for the humility one experiences in following the steps of the masters into uncharted territory, and to attain some of the knowledge of what has preceded for the one who wishes to advance.

In these days of cardiac catheterizations, Fick principles and laboratory methods, it is humbling to read this paragraph from Stephen Hales' dissertation of 1733: "And if the ventricle [human] throws out one ounce in a pulse then in seventy-five pulses of a minute the quantity of blood will be equal to 4.4 lbs., 11 ounces and in 34 minutes a quantity equal to a middle-sized man, viz. a hundred and fifty-eight pounds, will pass thro' the heart."

There is no need to revise the classics and this new edition is identical with the first published in 1941.

In addition to cutting cost the paper back two volume separation offers the obvious advantage of reducing the weight of the book in hand. This is of no small importance to that large group of busy practitioners who will read such a work as this in bed manually supporting the book. It is difficult to discern the improvement in the new title of three words over the more succinct Cardiac Classics.

Reuben Berman M. D.
Minneapolis, Minn.

MEDICAL GENETICS 1958-1960. An annotated review by Victor A. McKusick and other contributors. The C. V. Mosby Company, St. Louis, 1961, Price $14.50.

An exceptional book! A harvesting of 3 years published works on human genetics from all areas of medicine. Every medical reader of this book will find pearls of information about diseases that interest him. But more important he will gain an insight into the pervasive effects of our genes on our health and well being, especially in predisposing to, as well as causing disease.

This book is of especial interest to students and teachers of human genetics who will find it a valuable supplement to any textbook. Every practicing physician will enrich his knowledge and broaden his view of genetic influences in disease by even short moments spent reading paragraphs from the book. Each short paragraph contains the extracted essence of one or more articles on one subject, so one can open the book and read with profit on any page.

Other positive values are fine paper, large print, freedom from typographical errors, excellent photographic reproductions, and a thorough index. Further editions, which are to be expected in this important aspect of basic medical science, would be improved by a greater use of illustration.

Warren J. Warwick, M. D.
Minneapolis, Minn.

OLIGOPHRENIA: MENTAL DEFICIENCY IN CHILDREN by M. S. Pevzner, Consultants Bureau, New York, 1961.

This book, one of the International Behavioral Sciences Series, is an English translation of the Russian book, DETI-OLIGOFREY, published in 1959. This translation is a significant contribution to our knowledge of the interest and progress in Russian studies on mental retardation. Because it is written with a Pavlovian inclination, the American reader will find some of the terminology and attitudes unfamiliar. However, the Pavlovian orientation, the study of the dynamics of function in contrast to our ways of measurement and classifying of abilities, is the strong point that should make this book valuable to psychologists, psychiatrists, social workers, neurologists, and pediatricians who care for the mentally retarded. A significant weakness of the book is the lack of an index.

Warren J. Warwick, M. D.
Minneapolis, Minn.

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MAKING TODAY'S MEDICINES WITH INTEGRITY...
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From Page 595

to effect the synergism of community effort. In our churches, schools and government we achieve our objectives in the degree to which we accept the doctrine of cooperation. In organized medicine that physician who espouses the course of "rugged individualism," denying or opposing organizational effort while he hops from advantage to advantage achieved through this means, is confused. By means of cooperation with other physicians we have been able to bring the highest concept of medical care to the people.

There are many ways in which organized medicine serves to enrich the lives of people. This has been accomplished at the county, state and national levels as well as regionally and in areas related to each facet of health. We can be proud of these accomplishments and of the assurance medicine is providing that the quality of medical care shall remain high. As each patient requests the services of a physician, that patient of course wishes to be certain his physician is a good practitioner, well qualified to provide the medical attention which has been sought. Through insistence upon high standards for each practicing physician, the medical profession has ensured and maintained high qualifications. Indeed, medicine is its own most severe critic. At any suggestion of irregularity in practice the profession will quickly make an inquiry. Medicine has worked ceaselessly to expose and to restrain irregular practitioners and charlatans.

We have assisted in the distribution of physicians throughout all areas by pointing out the advantages of practice in rural communities. Indeed, the Minnesota State Medical Association sponsors each year another medical student whose only obligation is to practice in a rural town. The American Medical Association likewise is assisting generously in this endeavor to encourage the distribution of physicians to areas in which they are most needed. Our state office, too, at all times works to secure a physician for Minnesota communities which may need one. Likewise, young physicians are helped to locate in communities in which their services are most likely to be needed.

Medicine has endeavored to assure that at all hours of the 24, the ministrations of a physician will be available to those who need them.

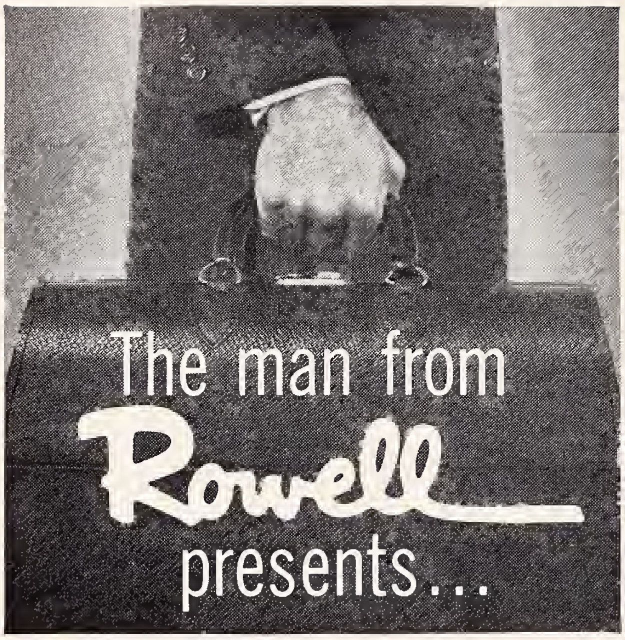
Organized medicine has worked ceaselessly by means of various committees, boards and commissions to improve the quality of medical care. We have assisted agencies of the government in procuring medical consultation and medical personnel when needed.

In the field of medical education organized medicine has contributed in a way no less resplendent. At the turn of the century, although there were hundreds more medical schools than there are now, many were providing poor training. At the insistence of the American Medical Association the quality of medical schools was markedly upgraded. Those schools which did not meet high standards were obliged to improve or to close. Continued insistence upon a standard of excellence persists today. Organized medicine has assembled and made widely available those data which concern medical schools, internships and residencies. It has examined all training centers for such work to assure that standards are being maintained. Rigid criteria have been established for those seeking qualifications as specialists. We have maintained examining boards to assure that standards of excellence will continue among those who practice a specialty.

Published by the American Medical Association are numerous journals which apprise physisions of new findings and opinions about the care of the sick. Each week the *Journal of The American Medical Association* is published and each month 10 specialty journals are published. Fortnightly the *AMA News* and *Today's Health* are brought out. The American Medical Association conducts two large postgraduate educational programs yearly at its main meetings. In the various states, too, there are many excellent publications which acquaint physicians with modern developments in medical practice. Certain county and regional medical societies and most specialty groups publish an official organ to hasten the news of medical advances to physicians. Physicians may secure from their American Medical Association Library medical films and periodicals not widely distributed and otherwise difficult to obtain.

Organized medicine is contributing generously to promote education and research which further improve the quality of medical care. We are actively engaged in the recruitment of medical students to assure an ample number of well-qualified applicants for medical schools.

Continued on page 647



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In the area of public-health education, organized medicine again has done a remarkable job. Numerous publications, radio and television programs and written communications provide the public with health information concerning such things as poison hazards, the desirability of automobile seat belts, the value of immunization and the early detection of serious disease. A major program has been undertaken to assist in mental-health research and in the availability of help for those in need. Medicine has met its responsibility concerning these threats to our national safety, and has been in the forefront in planning for action to be taken in the event of disaster.

In the socio-economic field organized medicine likewise has been active to assure a continued availability of medical care for the people. We have supported and promoted various plans to assist families in providing, through budgeting and prepayment, for the inevitable costs of illness. The American Medical Association and many states have evolved uniform and simplified claim forms to hasten handling insurance data. We have worked to assure that health-care plans will be free from exploitation, whether this be by policy holders or by physicians. Any such exploitation inevitably hurts medicine. We have been alert to our responsibility to study in depth the likely effect of any proposals for medical care which are suggested for legislation. We must prejudge the effect of all bills which have to do with plans for medical care. Many well-meant proposals actually might impair the quality of medical care, despite the best intentions of their proponents. Other bills deserve and receive our support. More than any other profession, organized medicine has stemmed our nation's headlong plunge into socialism, evident in trends during the past three decades.

Despite the fact that physicians are mostly dedicated persons who through years of preparation and ceaseless work have endeavored to help mankind, organized medicine, in which physicians are considered as a group, is beset by many who would damage or destroy the physician's stature. Undoubtedly some who assault our objectives do so from a sincere belief that other systems than the one we have now would provide a greater quantity and quality of medical care. Some who have attacked us have done so either because of failure to understand medical practice or because of ignorance of the recorded experience of medicine in other countries. Unfortunately, many of our most vocal critics appear to be deliberately attacking medicine because the physician stands as a bulwark against the socialistic plans some seek to implement, often for political gain.

The current questions, controversies and proposals which threaten the very foundations of the care of patients call for a strong voice and a resolute stand on the part of organized medicine. I have no reservations about the validity of our position on issues relating to the care of patients. I am alarmed, however, about the growing threat of governmental control over medicine. I am alarmed because of knowledge about other more socialistic nations and their current inferior care of patients.

My concern centers upon the apathy of many physicians when political activity is required to assure the privilege of continued excellence of patient care.

My disquiet proceeds from the fact that only one in 10 physicians ever participates in the activities of a medical society at a county, state or national level beyond that minimal contribution implied by membership, the election of others to office and the payment of dues.

My anxiety arises from the failure of many to really identify themselves with the struggle which organized medicine faces to assure continued excellence of medical care: a concern engendered by those physicians who say "they" and not "we" when discussing issues before us. Let me assure you that we are in the midst of a political maelstrom, with the outcome in doubt. Medical care as we have always known it is in grave peril of being engulfed by a socialistic system. It is the socialized patient for whom the bell tolls.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association

End

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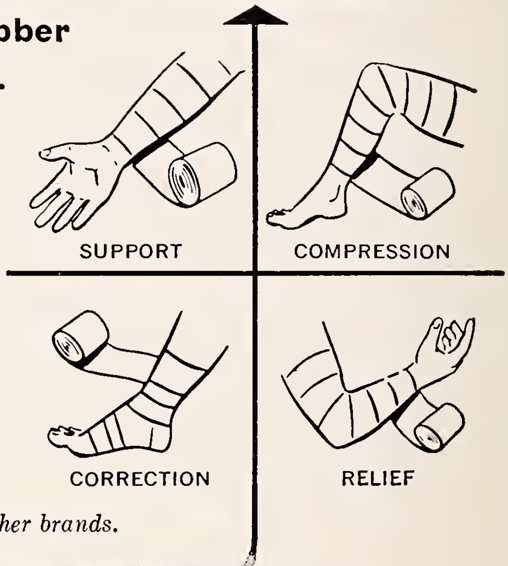

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Special Article

The Minnesota Physician and Action for Mental Health

RICHARD W. ANDERSON, M. D.*
Minneapolis, Minnesota

Country-wide a challenge has been given to the medical profession to aid in the improvement of mental health facilities and care. The first American Medical Association Congress on Mental Health will take place in Chicago during October 4, 5, and 6, 1962. The author points out the value of planning this program "from the bottom up" rather than having a plan imposed from the "top down." Physicians in each community of the state of Minnesota are encouraged to read this timely article and take immediate county action toward participation in the efforts of the State Medical Association.

In a recent address, the President of the American Medical Association pointed out to all physicians that mental health is America's number one health problem. A renewal of interest is this problem is now occurring at national, state and local levels. "Action for Mental Health," the final report to the congress of the Joint Commission on Mental Illness and Health, will bring about increasing legislative concern, since among its recommendations it states that, "Expenditures for public mental patient services should be doubled in the next five years—and tripled in the next ten." The implementation of the American Medical Association's mental health program was considered by The Council on Mental Health in February of this year, in preparation for the First American Medical Association National Congress on Mental Health, which will be held in Chicago October 4, 5, and 6, 1962.

The responsibility and concern demonstrated by these activities on the part of organized medicine make it incumbent upon all physicians, regardless of particular specialized interest, to evaluate and plan for local needs in this field of medical practice.

Future Plans

It is hoped that all interested physicians will give serious thought to the mental health facilities required in their communities, and make their recommendations known to the committees and agencies involved in mental health planning. The energetic and healthy skepticism of most physicians, regarding Federal aid to medical programs, should be diverted into mental health planning "from the bottom up." If local societies fail to provide for the mental health needs of their areas, they must assume the risk of having plans imposed "from the top down."

The Governors of the 50 states recently ratified the recommendations set down in "Action for Mental Health." This document, which has received the general but by no means unanimous or unqualified support of psychiatrists throughout the country, attempts to deal with the questions

Continued

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*Department of Psychiatry and Neurology, The University of Minnesota.

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of why care of the mentally ill has lagged, and why the mentally ill have been rejected. It goes on to discuss treatment demands, methods, and results. It makes us aware of the critical lack of man-power in the mental health field, and it concludes with an attempt to deal comprehensively with the difficult question: "How Can We Catch Up?"

Need for Psychiatrists

The physician alert to the emotional needs of his patients will not be surprised to learn that psychiatrists are in short supply and that efforts must be made to recruit more young physicians into this specialty, and to provide instruction in the treatment of emotional illness for non- specialized physicians. This has been ably done in many areas by the American Academy of General Practice. Since it is likely that even the best efforts at recruitment and training will not fully meet our needs, we must face the fact that the time-consuming, one-to-one relationship of the patient and physician termed psychotherapy, is becoming an increasingly costly luxury.

Medicine has already delegated, under supervision, a part of this function to "nonmedical mental health workers with aptitude, sound training, practical experience, and demonstrable competence . . . under the auspices of recognized mental health agencies. The trained psychiatrist, utilizing his skills in the treatment of an optimum number of patients, finds himself devoting an increasing proportion of his time to supervision of therapy by another therapist, and correspondingly less time to direct patient services.

A current healthy trend among psychiatrists, to abandon, at least part time, the private office for the hospital, clinic or the welfare agency must be further encouraged if we are to meet our treatment needs.

To date, the image with most appeal for the young psychiatrist has been that of "therapist" rather than that of "teacher," "supervisor" or "director." Granting that the latter functions might be better undertaken by psychiatrists of more mature years, the needs for service dictate that the supervisory function must be undertaken early in the phychiatrist's career, before he is enmeshed in a web of individual private practice from which he can extricate himself only with great determination, financial sacrifice, and difficulty.

Medicine, in its planning for mental health, must consider new methods of making public service attractive to the young psychiatrist. While public service today is challenging, its low pay rates and high patient-doctor ratios tend to discourage all but the most dedicated. Imaginative thinking now, as we plan for the future, may increase the numbers of young psychiatrists, but should also serve to alter their areas of activity, particularly if public psychiatric service receives more attention, cooperation, and regard from the general medical profession.

Hospital Care

The need for a wider distribution of the professional activities of psychiatrists becomes most evident to us as physicians when we follow the progress of one hypothetical patient in need of psychiatric care. Let us assume that this patient is fortunate enough to live in an area where there are rapidly available a private psychiatrist, a psychiatric ward in a general hospital, a state hospital for the mentally ill, and a publicly supported mental health center. The patient is referred to a psychiatrist who finds him in need of hospital care, and admits him to the psychiatric ward of the general hospital. Treatment proceeds, but in our hypothetical case, he is not sufficiently recovered in the 70 days allotted by his voluntary medical insurance to return to his home. Accordingly he is transfered to a nearby state hospital. Upon arrival, he is quite properly re-examined, re-tested, and a new appraisal is made of his treatment needs by physicians who have not known him prior to that time. Since state hospitals discharge almost eighty per cent of first admissions within a year, the odds are good that within a few months our patient will improve sufficiently to return home. In need of post-discharge care, with funds exhausted by his original hospitalization, and income depleted by months in the hospital, private care for him is not feasible. The patient is then referred to the mental health center or County Welfare Board for follow-up care. Although the hospital transmits a referral summary, the patient is again "worked-up," this time by the clinic or agency staff, who then provide the services so necessary to the patient's readjustment in the community.

Continued

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Wednesday, September 19, 1962
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Health Center State Hospital Integration

As physicians we are at once struck by the fact that although this account includes some of the best treatment services available today in Minnesota, it lacks integration and continuity. We immediately wonder how we can, as medical practitioners, undertake planning which will result in a better-integrated treatment picture for this patient. Fortunately some of the current ideas and trends in psychiatry, considered "radical" only a few years ago, may help us.

The first trend, leading our way to a concept of integrated treatment, is that of the broadened activities of many psychiatrists, who often include the community mental health center and the state hospital in their regular activities.

The second trend, toward a smaller state hospital, conveniently located, with an open staff, would make it possible for the state hospital to hire the psychiatrist on a part-time consulting basis. He could then continue supervision of the patient after the latter's arrival at the state hospital, aided by the full-time staff, who would save time in not having to repeat the diagnostic study of the patient. In these days of automation and copying machines, the complete clinical record could be transmitted and added to, rather than being reduplicated by time-consuming medical and psychological study.

Although the psychiatrist might not be the patient's primary therapist in the state hospital, the patient would be aware of the psychiatrist's continuing contact, interest, and supervision. As time approached for discharge, the psychiatrist, also employed part-time in the mental health center or clinic, could inform the clinic staff of the patient's problems, submit to them the entire clinical record to date, in copy form, helping the staff carry out the services necessary for his rehabilitation.

Role of non-psychiatric Physician

The desired picture becomes complete only when we fully realize the essential role played by non-psychiatric physicians in the treatment and rehabilitation of emotionally disturbed patients. Those physicians who have provided follow-up care, combining patient guidance with the judicious use of psychotropic drugs, are aware of the importance of these measures for the maintenance of many patients in the community, where they may again lead satisfying and productive lives. Although a psychiatrist in the community could not give such direct service to many patients needing it, his presence would make consultative support and psychiatric information readily available to the physicians who serve these patients.

Comments and Conclusions

These contrasting pictures of our present psychiatric care, less than adequate because of its fragmented, tradition-bound systems and of a new hypothetical ideal, have been presented as a device to stimulate thought about integration of private and public psychiatric hospital and outpatient services.

We may be certain that, where local planning does not exist, plans will be imposed by larger units of government. The superiority of local planning and activity in these areas has been clearly demonstrated by the success of the Mental Health Centers established throughout the state during the past four years. Previously, when these were entirely state-supported, only four such clinics functioned. With the stimulation of state matching funds, local participation and planning have come into being, and within a brief time fifteen such centers are now in operation.

At the state level, the Governor has recently appointed a Citizen's Mental Health Survey Committee, charging it with the responsibility of reviewing the program we now have in this field. Many physicians are serving on this committee, including representatives of the Committee on Nervous and Mental Diseases of the Minnesota Medical Association, as well as of the Minnesota Psychiatric Society. These medical representatives are well aware that problems in the mental health field vary from one area to another in our state, and would welcome the guidance of physicians as individuals and of local medical societies in formulating rational and realistic long-range plans. If treatment of the emotionally and mentally ill is to remain, as it properly should, within the domain of medicine, it deserves thoughtful medical planning and leadership.

Continued

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A concept deserving of our interest is that of regional planning for mental health needs. Dr. David Vail, Medical Director of the Department of Public Welfare, has pointed out that these regions might well be designated by the boundaries of the receiving areas of the existing state hospitals for the mentally ill. These boundaries, with minor administrative alterations, might be made to coincide with the areas served by the existing Mental Health Centers. If planning were to progress in this way, we could define a number of areas in the state, each of which could devote thought to the integration and coordination of the efforts of all of its mental health resources. This could include a state hospital, one or more Community Mental Health Centers, possibly a psychiatric unit in a general hospital, plus the numerous supporting services existing in County Welfare Boards, school systems, mental health societies and religious organizations. Such an effort could properly be termed **Regional Mental Health Planning.** Ideally, medicine should take the leadership in such an enterprise, and should enlist the cooperation of the groups enumerated above.

Today we lament the fact that we cannot attract psychiatrists to our smaller communities, to our state hospitals, or to some of our mental health centers. If we are to make the best use of psychiatric services, it is up to all of us to take a fresh view of the problem, and to challenge the young psychiatrist to work in the total mental health activity of an entire region. Where we cannot attract these trained people solely on the basis of private practice, state hospital service or clinic work, we might find it interesting to work simultaneously in all these functional areas. The diversity, the stimulus, and the opportunity for service to a large number of patients will be considered attractive. This will be so if the local physicians will continue to be interested in the mental health activities of their region.

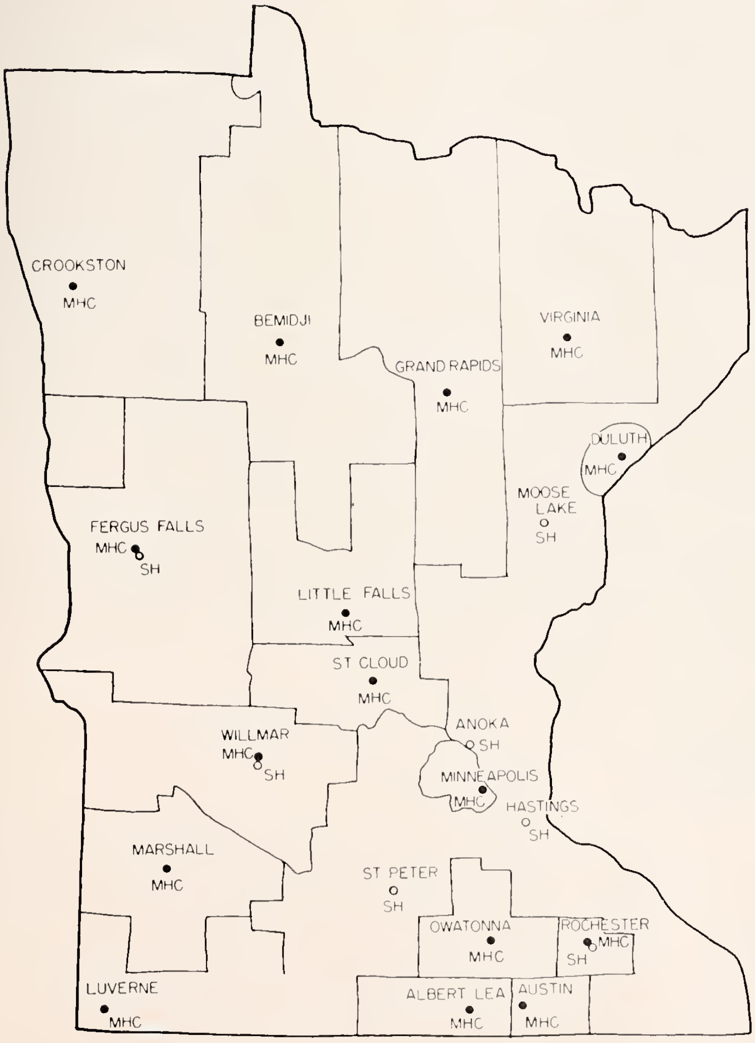

FIGURE 1*

*Dark outlines show proposed areas to be served by Mental Health Centers (MHC). These coincide in many respects with the receiving areas of the State Hospitals (SH) and, with minor administrative alterations, would permit integrated *Regional Mental Health Planning* for each area. In order to simplify the diagram, the Mental Health Centers have been designated by their geographical locations rather than by their proper names.

Figure 1 shows a map of Minnesota, upon which are outlined the areas served by Mental Health Centers (MHC) and the locations of the seven State Hospitals (SH) for the mentally ill. The Medical Director or Superintendent of the hospital in your area may be known to you as a member of your local medical society. You will find him more than willing to discuss with your society the mental health needs of your locality.

Committees may come and go without exerting demonstrable influence upon the distribution of phychiatrists. Since psychiatrists are physicians first, they will tend to locate themselves in areas where medical interest and support are assured. The cooperation and respect of their colleagues are as necessary to them as the need to serve patients, and they are prone to respond to sincere acceptance in the medical community. In this respect, Minnesota's mental future is in your hands.

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ROBERT J. HALEN, M.D.**
Pittsburgh, Pennsylvania

Pain in the lower part of the back is an extremely common complaint and has many causes. A discussion of low-back pain in industry must include the emotional, social and economic factors peculiar to the industrial setting as well as the usual medical factors.

At the onset of low-back pain in an industrial worker, the contribution of these special environmental factors is apparent. The employee must qualify for treatment as an "industrial case." The occurrence of an accident or injury must be demonstrated clearly enough to satisfy the requirements of the compensation law of the state in which he works. The private "non-industrial" patient does not have this barrier to pass. In industry, diplomatic handling of this phase of the procedure by supervisory personnel, representatives of compensation boards and medical personnel is necessary.

The initial determination of the facts about the occurrence of the accident or injury must be as objective as possible. Many factors make objective analysis difficult. This investigation is often an obstacle between the patient and ultimate treatment and recovery; it may be so directed or so interpreted as to favor rationalization by the patient of ommissions and additions to the history of the original event.

The management representative has the responsibility of asserting valid company interests. The employee, despite development of alternate benefit plans, such as sickness-accident insurance and medical surgical plans, believes that his job security is threatened less by an occupational back problem than by a nonoccupational back problem. This feeling of insecurity is particularly prevalent in the employee of heavy industry where a "strong back" remains a requirement for many jobs. He has observed that many backaches become chronic, particularly when a negligible event precipitated the initial episode.

When the worker reaches the first medical installation, a tentative diagnosis should be made and appropriate immediate treatment begun. Elicitation of the facts of the accident or injury and preliminary consideration of compensability should be noted also.

Causes and Diagnosis of Low-Back Pain

The causes of low-back pain may, for the present purposes, be classified as follows:

1. General bodily diseases, such as infections.
2. Diseases of the visceral organs.
3. Diseases of the back, such as primary or secondary malignant tumors or tuberculosis of the bone.
4. Abnormalities of the structure of the back, such as protrusion or degeneration of the intervertebral discs, muscular or tendinous sprains, congenital defects, and degenerative joint disease.
5. Psychoneurotic problems, such as conversion hysteria (perhaps malingering may be considered in this category).
6. Unknown causes.

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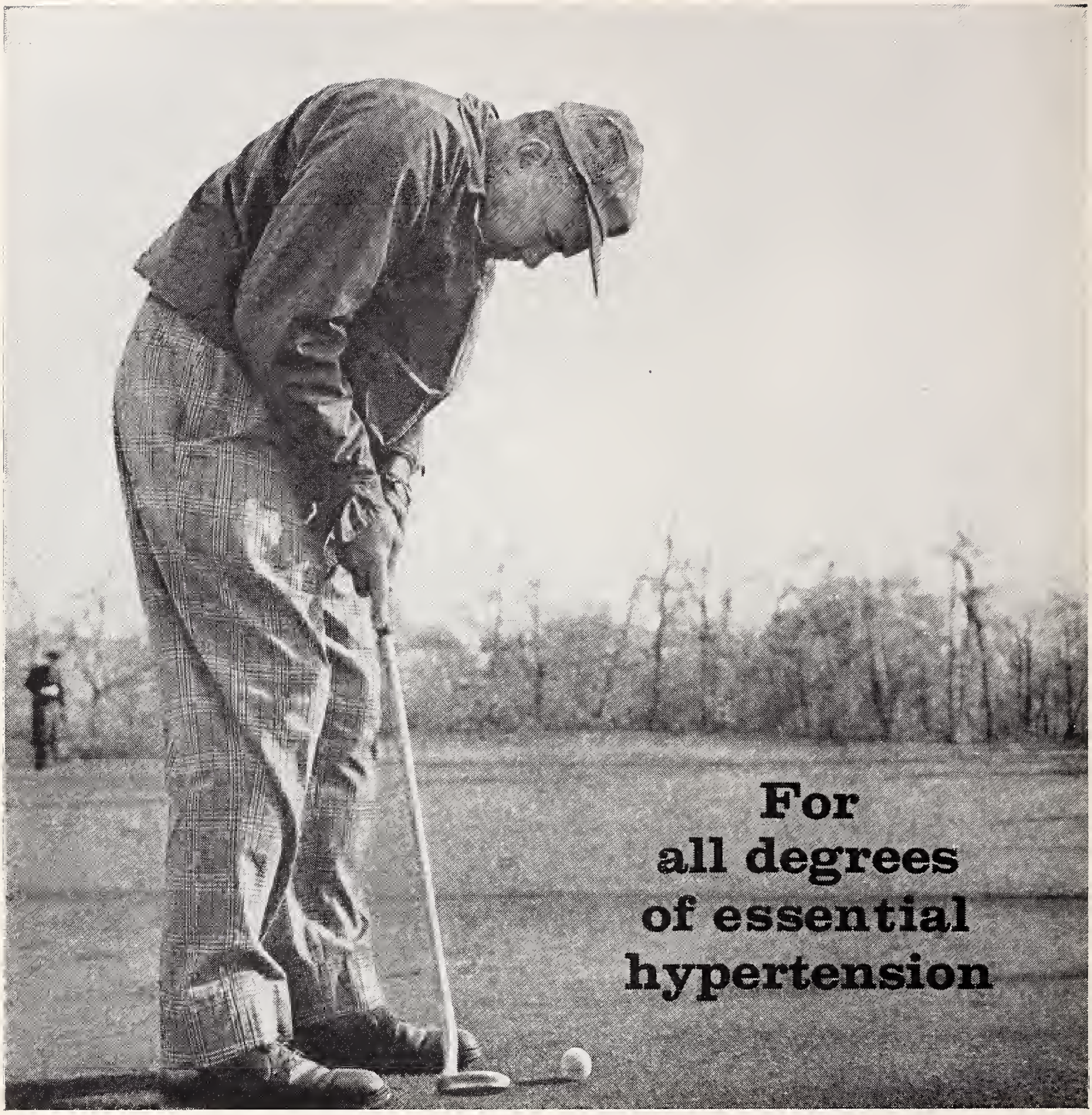
*Presented at the Symposium on Disabilities, Virginia, Minnesota.

**Medical Director, Jones & Laughlin Steel Corporation.



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†Hutchison J. C.: Current Therap. Res. 2:487 (Oct.) 1960.

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Within each of these categories are numerous more specifically defined conditions. Any of these causes may be present in the industrial worker. The ease of excluding or implicating any of these causes varies considerably and may require repeated observations and laboratory and X-ray examinations. A positive diagnosis may be possible, but frequently the diagnosis is only presumptive.

After an appropriate period of observation, this tentative or presumptive diagnosis may be changed. One can see that an early compensation ruling may be built on a pillar of sand—in this case, a tentative medical diagnosis. For administrative reasons and good employee relations, however, an early decision is desirable. It is unfortunate that efforts by the physician in industry to afford the patient temporary relief during the period of preliminary observation are later construed as an indication of acceptance by the employer of liability in some jurisdictions. In the non-industrial case, this need to relate the low-back complaint to any physical event is not as pressing or important.

Assuming a diagnosis has been made, one proceeds to treatment. Treatment is directed toward elimination of the cause, sustaining the patient until natural forces effect relief, assisting the patient to live with a chronic condition for which no specific cure is available, and providing all specific and indicated treatment. This elementary program usually can be followed once a satisfactory relationship between the patient and physician is established.

The complexity of our industrial society imposes further demands. The problem of causation has been mentioned. What is the present degree of disability? What will the future course of the problem be?

On-the-job rehabilitation of the employee is desirable. The constructive effects of return to the work situation in the prevention of chronic invalidism are well known. It is, however, becoming more difficult for the industrial manager to find suitable work for employees needing rehabilitation. More complex requirements of a job and the need to produce a piece of work as efficiently as possible have increased the reluctance of the manager to accept an employee who cannot perform a reasonable amount of work. Placement problems will increase but can be met satisfactorily by cooperation among employers, employees, unions, and, perhaps, governmental bodies.

Three Specific Problems

Three types of clinical back problems—the intervertebral-disc disturbances, the congenital low-back defect, and spondylolisthesis and its precursor—will be discussed in order to illustrate specific problems when these occur in industrial workers.

Intervertebral Discs.—The back is made up of 33 vertebrae articulating with each other, connected by ligaments and separated in their densest portions by intervertebral discs. These discs make up about 25 percent of the height of the vertebral column. In the center of this disc is a nucleus. This is an ovoid structure and in early life is made of gelatinous material and surrounded by a membrane. As life progresses, the intervertebral discs, particularly the nucleus, become less rubbery and more fibrous. This change, with loss of fluid from the structure, explains the phenomenon of becoming shorter as we get older. The process of degeneration of the discs is a product of how good the disc was to begin with and how much "wear and tear" it has been subjected to. "Wear and tear" are related to age, the type of work performed, injuries experienced, body weight, and structural and postural disturbances which may have concentrated unusual stress on various segments of the vertebral column. The earliest narrowing of discs occurs in the regions subject to the most motion in our every day activities—the lower part of the neck and the lower part of the back.

A large percentage of patients with low-back problems have abnormalities of the disc. This

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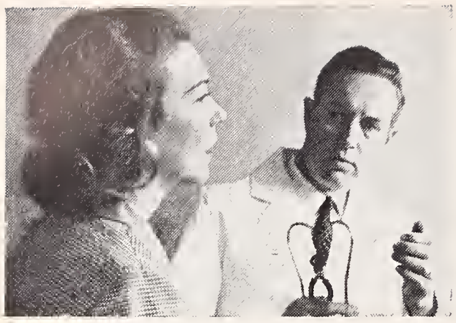

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*Gamble, C. J.: Am. Pract. & Digest Treat. *11*:852 (Oct.) 1960. See also Berberian, D. A., and Slighter, R. G.: J.A.M.A. *168*:2257 (Dec. 27) 1958; Olson, H. J.; Wolf, L.; Behne, D.; Ungerleider, J., and Tyler, E. T.: California Med. *94*:292 (May) 1961; Kaufman, S.A.: Obst. & Gynec. *15*:401 (Mar.) 1960; Warner, M.P.: J.Am. M. Women's A. *14*:412 (May) 1959.

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phenomenon has been attributed by the evolutionist to man's assumption of the erect posture. Whether this is true or not is unknown.

The degenerating disc, losing its fluid content and vitality, becomes more susceptible to leaving its place of confinement and may thus herniate. This extruded tissue may cause pressure on structures in the region, particularly nerve roots, causing pain and dysfunction of a nerve root.

Is herniation of the disc traumatic? Is it related to a specific event while at work? When a 20-year-old man falls a significant distance in such a way as to place considerable torque on the lower part of the back and has prompt symptoms and findings of nerve-root pressure, that injury can be considered to be the major and primary cause of the disc protrusion. More commonly, however, the employee is a middle-aged man with preexisting narrowing of his lumbar interspaces who, while performing a job that he has done hundreds of times, experiences a sudden onset of pain and is found subsequently to have a herniated disc. In this instance, the final event is only the culmination of a series of traumatic episodes to the lower part of the back beginning in early life.

Congenital Defects.—Congenital and developmental defects of the lower part of the back present additional problems. The lower part of the back is the commonest region of the body for congenital defects, and some writers estimate that half of the population have them. Most of these congenital defects are minor and contribute nothing to the presence of back pain. However, 10 percent of congenital defects do, in fact, interfere with normal function and motion of the vertebral column, and may eventually produce pain.

Following an event at work, the employee with a significant congenital defect who states he had never had back difficulty may develop chronic, recurrent back pain. Has the event caused a disruption of an equilibrium previously established? Is the chronicity of the complaint related to altered posture and poor muscle tone or to tension from worry and inactivity occasioned by the obvious medical concern and compensation proceedings?

Spondylolisthesis.—Spondylolisthesis and its precursor, spondylolysis, have an incidence of 2 to 4 percent in prospective employees examined for employment. They have not been included in the category of congenital defect because the cause of these conditions has not been determined. It was long presumed to be developmental and due to failure of fusion of growth centers of the vertebrae. Recent literature tends to favor the theory of a march-type fracture developing as a consequence of chronic stress and poor circulation to the bone, presumably on a congenital basis, with perhaps a single traumatic event being the final etiologic agent. The possibility of this condition being an unhealed fracture had been considered and eliminated. What then is the relationship of a twist, lifting stress or fall to the development of symptoms in an employee found to have spondylolisthesis?

In these three aforementioned instances, namely congenital defects, discogenic disease and spondylolisthesis, the problem has not ended with adjudication of the claim. Should the employee return to work and what kind of work should he perform? Our culture has not completely abandoned the theory that gainful employment is salutary to health and well-being. The employee is seldom so affluent that he can afford not to work. The employer is anxious to return the loyal, well-trained worker. The risk of an additional compensation claim is ever present with these three specific entities, however. Placement at work which requires little stress on the back may be possible. Too often such work is unrelated to the employee's past experience and training. Additionally, it may be out of the lines of job-progression as determined by labor-management agreements and may require abandonment of seniority privileges.

Comment

These few examples are not presented as exhaustive discussions of the aforementioned disorders of the back but rather to indicate that medicine frequently does not have all of the an-

Continued

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swers to questions posed in compensation proceedings involving patients with ailments referable to the back. To meet the requirements of the law and to render that which is due both the employee and employer, questions as to causation, disability and prognosis must be answered. The physician must frequently give his opinion. Because of the social and economic implications of low-back pain in industry, it is extremely difficult for the physician not to form an opinion in the light of his own social and economic background in addition to his medical training and experience. The physician is frequently accused by his attorney friends of attempting to be judge and jury. Yet, in a measure, this is a demand placed on the physician if a positive medical statement is to be made. Physicians, too, are critical of diagnostic and medical judgment made by referees, judges and juries. We are most critical when the verdict is the result of inadequate consideration of our own, and presumably the better, medical opinion. On what can a judicial body pass its decision when faced with opposite opinions? The better such groups are informed medically, the more just the opinion will be.

At present, I believe our present compensation and tort-law litigation proceedings are inadequate in dealing with low-back problem in industry.

A society-created complex has been developed about this low-back problem. This complex is so large and inclusive that it tends to obscure the primary medical task which is to help an individual with an annoying, intermittently disabling and frequently chronic complaint to make a satisfactory adjustment to this problem and to remain a reasonably happy and productive member of society.

What effect does a compensation procedure have on achieving this goal? Initially, a situation of blame is established. Work has created a disability, at least for legal purposes. Hostility toward the work-environment, a latent trait in most of us, is fostered. The realism of this blame can be seriously questioned medically, and is a serious deterrent to patient cooperation in treatment efforts. One frequently gets the feeling that the employee with a problem of disability in his back which is in litigation symbolically detaches himself from his back pain and looks upon it as a situation which was created by an employer and which had better be taken care of. The patient's sense of responsibility to participate in therapeutic efforts is often lost.

Passive needs and subconscious wishes to become a more dependent member of society are enhanced. Insight is difficult to engender in the employee-patient enmeshed in the medico-legal web incident to an industrial back problem.

The element of financial gain, which varies from state to state, may become more attractive to the patient and is an additional obstacle to recovery.

What then is the solution to the low-back pain problem in industry? Better pre-employment investigation, including a past medical history and physical examination, will help to identify susceptibles. Pre-employment X-rays of the back are more often becoming a part of the initial evaluation of a prospective employee. The applicant with conditions that commonly cause difficulty, such as spondylolisthesis, can be recommended for less strenuous tasks and can so plan his career as to avoid unusual stress on his back. Physicians are concerned that such identification may create disabilities by arousing undue concern in applicants. Also, if an applicant must be rejected for available work, in a measure disability has been created in the absence of physical complaints. An alternate solution, to permit people to work as they choose and to recommend lighter work only in the event difficulties with the back are experienced, has been in effect for years. Under this system, a worker may reach his middle years before difficulty is experienced, and retraining or replanning a work career becomes less practical, to say nothing of the labor relations problems that are created. Additionally, under this system, low-back cases

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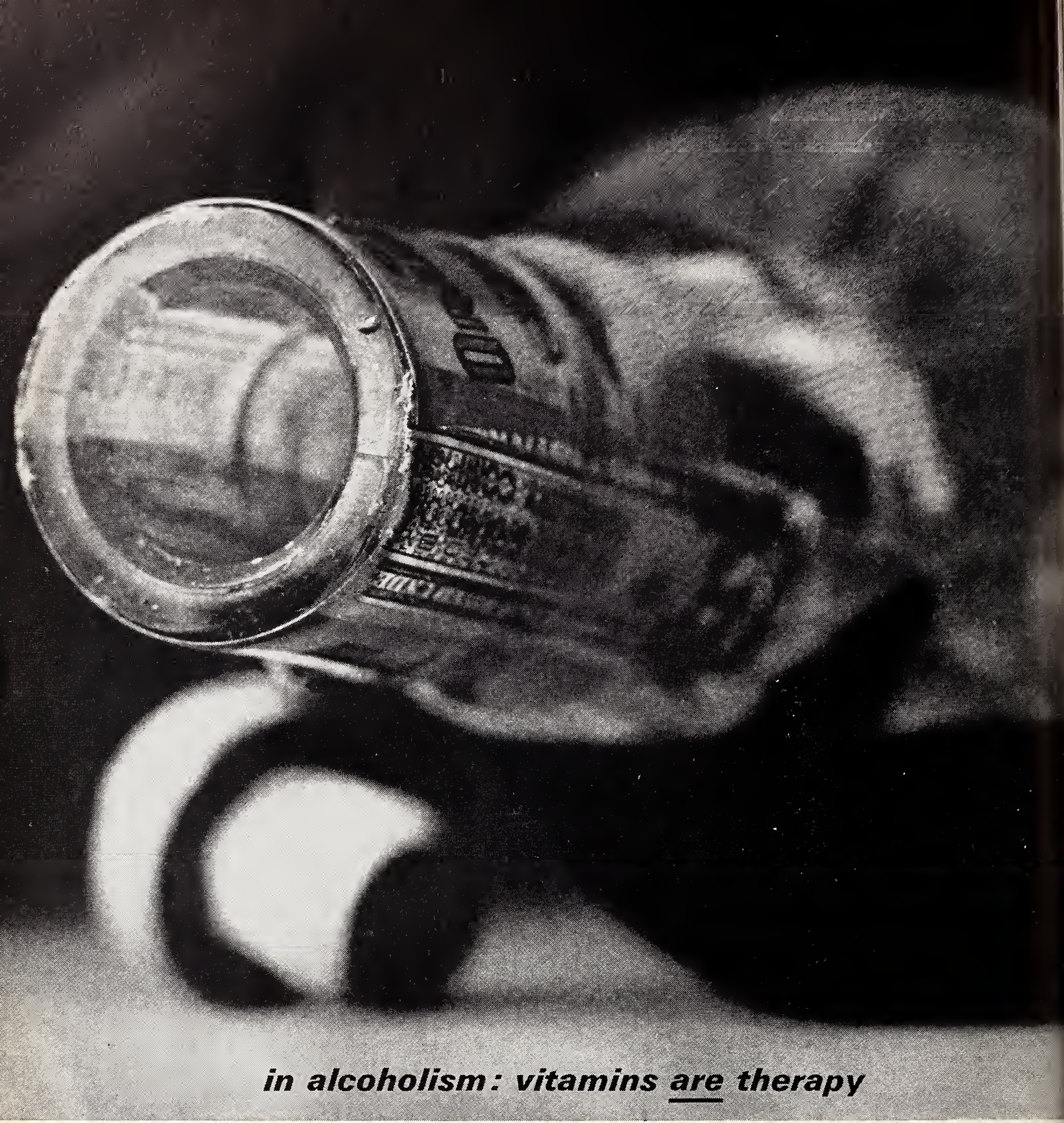

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Preplacement procedures will not eliminate problems of low-back pain in industry. Safety programs, including instructions in protective body mechanics, must continue. Labor-saving devices, particularly in handling materials, have lessened back stresses. Unfortunately, this has been accompanied by less exercise and poorer physical fitness, which negates some of the expected improvement in the incidence of back problems.

Conclusions

The socio-economic factors that contribute to duration of disability in low-back problems are created by society and can be corrected by society. As responsible members of the community, all of us can help in this endeavor. Aside from instances of clear-cut trauma, the advisability of considering any back ache as compensible must be questioned. This course unfavorably affects patient recovery. It stimulates measures by industry to increase the burden on the individual and community of these "created" disabilities. Financial help to individuals and families during disability periods and more effective second-injury laws must be considered. Impartial medical boards have a place in the handling of these cases. Attitudes in our society must return to respect for human dignity and restore the sense of individual responsibility, which tends to be lost in group action. Ultimately, the patient-employee with a chronic low-back problem has in fact an individual problem. It requires his patience and understanding, adequate medical care and a favorable social climate to work out the problem. In good faith, an unfavorable social climate has been created, but also in good faith, this can be corrected.

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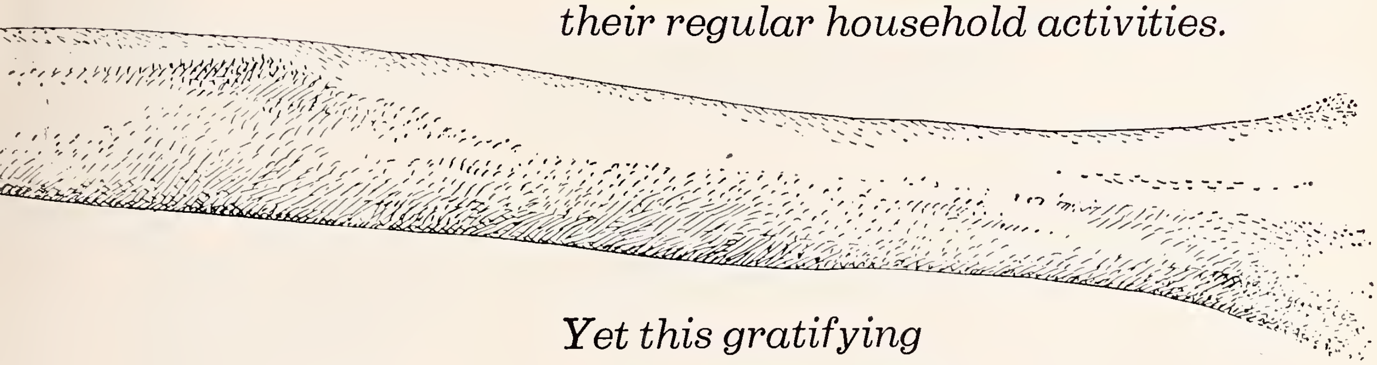

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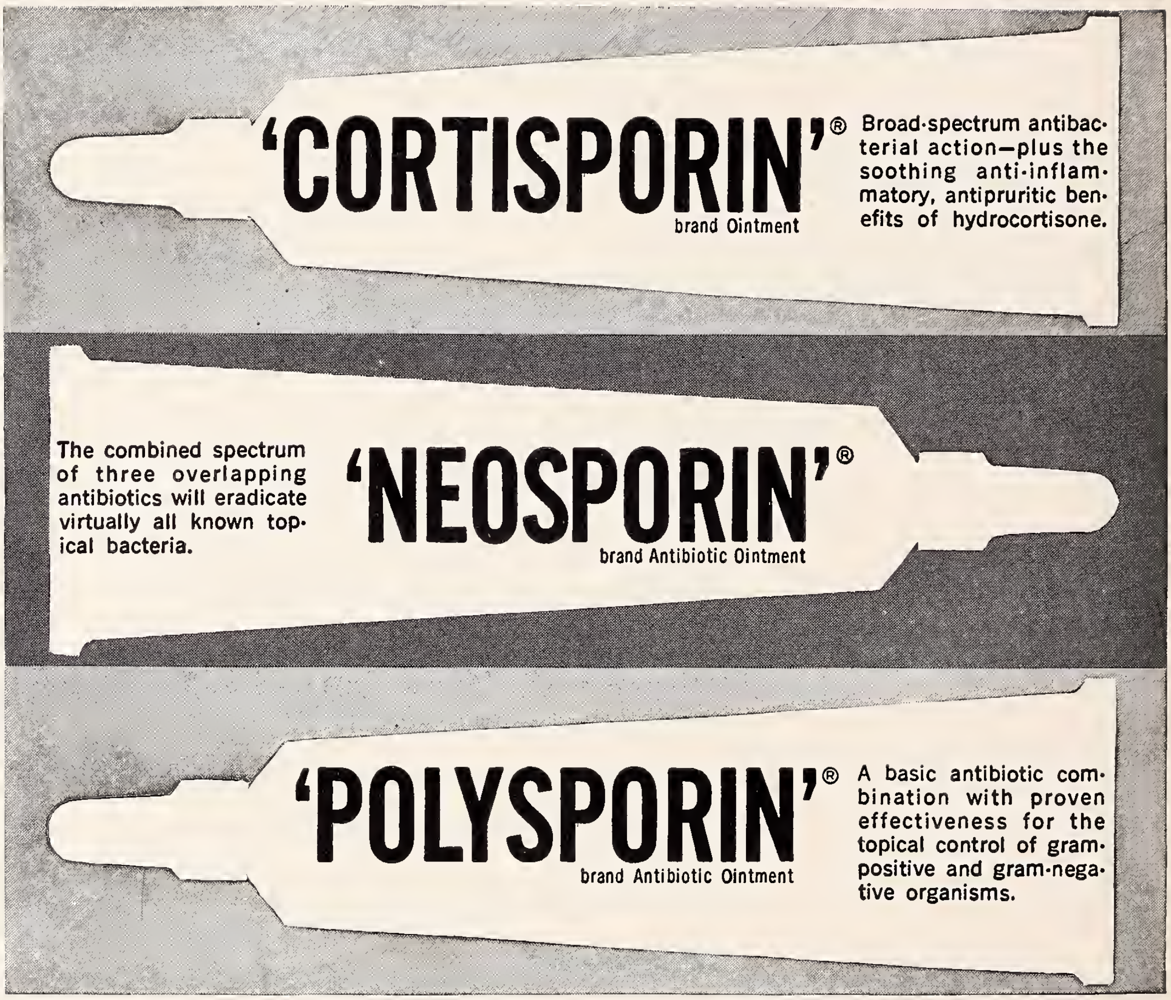

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History of Medicine

Medicine IN WRIGHT COUNTY, Part V

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

Theodore Jefferson Catlin, Sr., was born at New Albany, Indiana, across the Ohio River from Louisville, Kentucky in 1849. His father, Hiram Wesley Catlin, and his family, moved to St. Peter, Minnesota in 1855. He practiced medicine there until his death in 1860, leaving a wife and five children. Theodore was the oldest, age eleven, and had quite a time trying to help bring up the rest of the family. When he was thirteen years old the Indian uprising took place and New Ulm was attacked. St. Peter expected an attack any day and Theodore helped mold bullets for the defense and watched the men erect a palisade about the town. In 1855 about half the population there were Sioux Indians, and he had played with the Indian children and knew many of the braves who now were on the war path. Later he worked in a printing office at St. Peter. One of his boyhood friends was John A. Johnson, later governor of Minnesota, also a printer.

He started his medical education at the Iowa State University at Iowa City, and completed his work at and graduated from Rush Medical College, Chicago in 1874. He located for practice at Delano, Wright County, in the same year and practiced there until 1906.‡ He was licensed October 11, 1883 when the medical practice act went into effect. He was a charter member of the Crow River Valley Medical Society in 1883 and was elected first vice president at the first meeting. At the second meeting in March, 1884 he was appointed a member of the committee to work out a fee bill. He was again a charter member when the medical society was reorganized as Wright County Medical Society in 1894 and again in 1903.

Dr. Catlin was a conscientious general practitioner of the old school, but was plagued by poor health during most of his active years. The rigorous climate and the poor roads made his efforts to serve the people very arduous.

From the start Dr. Catlin was very active in the community. He was interested in the Village Improvement Association in 1879 and was nominated Justice of the Peace in the same year. In October, 1881 he was moderator at a special village meeting. He was actively interested in public health in his town and county. In 1883 he vaccinated a great deal when smallpox broke out in Frankfort. In May of that year he was appointed to the Board of Health and also was health officer. The Board had just been created by the Villages Council to guard against smallpox (there were eighteen cases in St. Michael). He was reelected to the Board in 1884 (with Dr. Ray and Mr.

‡With the exception of a very short period in 1881-82. About September 1st 1881 he moved to St. Peter where he was "already well and favorably known. . ." (Wright County Eagle 9-8-1881) and where his sisters lived. His professional card appeared again in the Wright County Eagle in April, 1882; therefore he must have returned in that month or even before.

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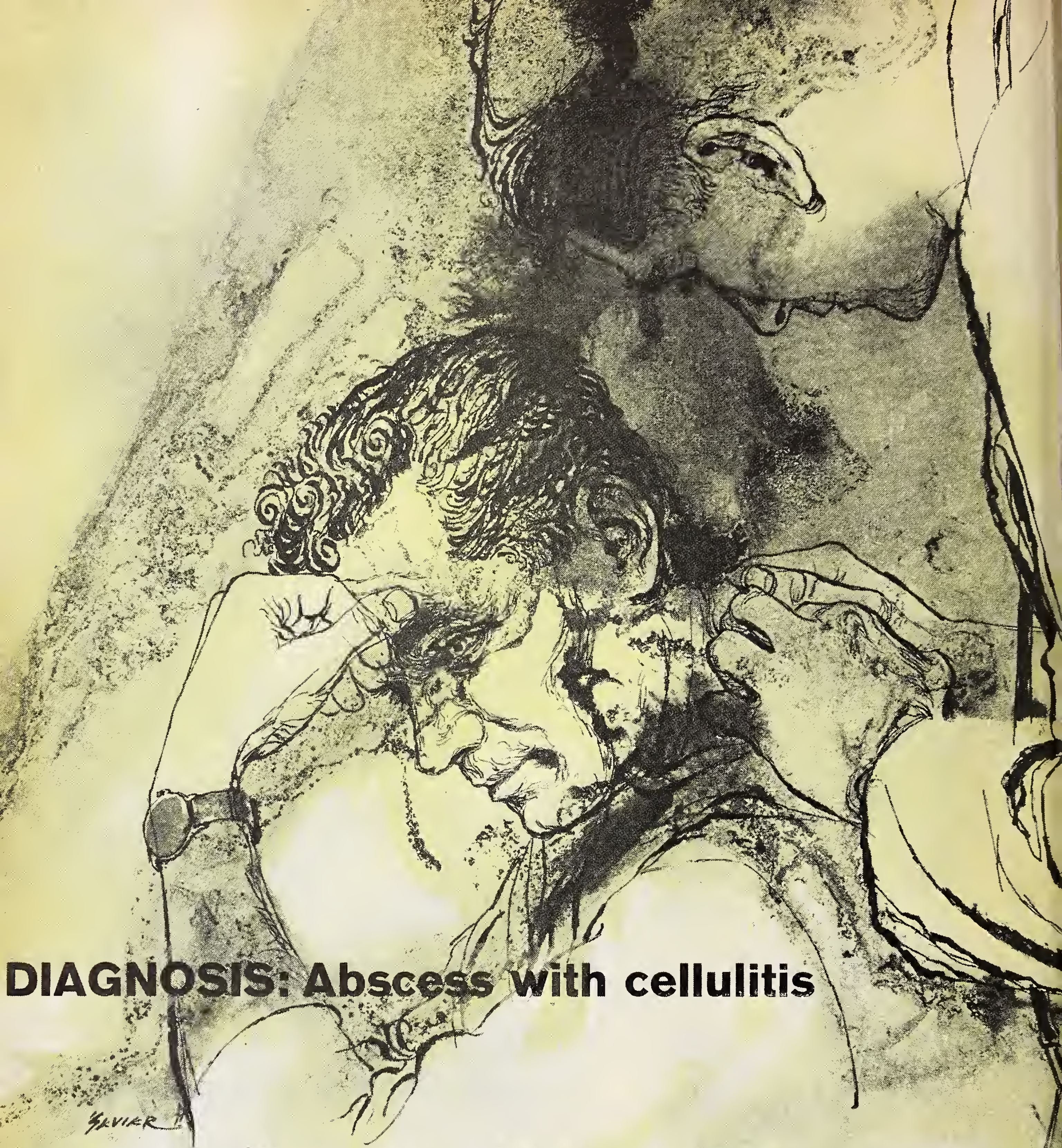

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Gutzweiler, Jr., the editor of the *Delano Eagle*. In 1887 he was president of the Board of Health when it announced its resolution on a cleanup of the town and he was health officer in 1888.

He also participated in social activities; he was interested in the schools and especially the literary society where he debated on subjects like school ventilation, free trade, protestantism versus catholicism, whether doctor, lawyer or minister are more beneficial to society, etc.

He took an active interest in politics and prided himself as being a Jeffersonian Democrat. He bought the *Buffalo Gazette* from Dr. George C. Barton late in 1889 and moved it to Delano, where he published it for about five years as a supporter of Democracy. Its beginning was not too auspicious. The first issue in the new home of the *Gazette* was to appear shortly after December 1, 1889 but it was delayed because the printer left Dr. Catlin on the day of publication.# In July 1884 he attended the Democratic Convention in Buffalo as a delegate from Franklin. In August of that year he was a charter member of the Cleveland and Hendricks Club and acted as temporary chairman at its organizational meeting. In 1888 he was again appointed to the Democratic Committee for the town of Franklin and there were rumors that he was interested in legislative honors.

He had a large practice, and therefore it is not surprising to find that he often was called to help in very difficult cases. Thus, he helped Dr. Ames with the removal of a large cystic tumor from the knee of a man (1881). He frequently was called as witness in unusual cases when the court needed medical testimony, for example, in the Oberlein Murder case in 1882.##

There were several tragedies in his family. In November, 1883 he lost his oldest son, Asa, who had contracted diphtheria. In 1886 he lost two sisters within one month — Mrs. J. B. Coffin at Huron, Dakota and his unmarried sister Minnie in St. Peter.

In 1906 he moved to Aitkin County and later to the home of his son, Dr. John J. Catlin at Buffalo, where he died in 1935.

E. Y. Chilton located in Howard Lake in 1880 and remained there until his death in 1914. He was one of the important pioneer physicians of Wright County.

Dr. Chilton was born in Cumberland County, Kentucky August 25, 1849. He had a good education and very early started "reading medicine" with a prominent physician in his native county. Later he took a collegiate course in medicine and surgery at Miami College, Cincinnati, Ohio in 1874 and first opened an office in Albany, Kentucky. In 1880, as mentioned, he came to Wright County, locating in Howard Lake. He immediately was an active member of the community and references to him are frequent in the Wright County newspapers from 1881 on. In July of that year he broke ground for a new home; in August, 1882 he was one of the essayists at a meeting of the Temperance Society; in November he moved to a new office; in 1883 he planned a new house.

When the Crow River Valley Medical Society was organized in 1883 he apparently was one of the leading physicians in the county. He was one of the four physicians present and was elected secretary *pro tempore* when the meeting was called to order by Dr. Catlin. When officers were elected he became the first president. At the March meeting in 1884 he presented two surgical cases. He also was a signer of the original Articles and By-laws of the society and was elected delegate to the A. M. A. He was again a charter member when the Society was reorganized as the Wright County Medical Society in 1894. This time he was elected secretary. He was again active in the reorganization in 1903 at which time he was again elected president.

He was a very active practitioner in the early 1880's and was called professionally to all parts of Wright County. In 1886 he moved his office next door to Scott's Drugstore, where he had commodious quarters.

Continued

#**The Wright County Eagle,** December 12, 1889.
##**The Wright County Eagle,** June 15, 1882.

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If you have been prescribing the older corticosteroids— such as prednisone, prednisolone, hydrocortisone or cortisone, and have hesitated to prescribe the newer corticosteroids because of economic consideration for your patients, you can now secure all of the clinical advantages of dexamethasone at approximately the same prescription expense. Mg. for mg., HEXADROL is approximately 6 times more potent than triamcinolone or methylprednisolone...8 times more potent than prednisone or prednisolone...28 times more potent than hydrocortisone...and 35 times more potent than cortisone.

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For complete information concerning HEXADROL— including indications, dosage, precautions and side effects—or if you would like a trial supply, ask your Organon Representative, or write to: Director, Professional Services, Organon Inc., West Orange, N. J.

'Organon'—your professional assurance of quality
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In 1887 he was interested in promoting child health and offered two prizes — of $15.00 and $10.00 respectively — for the finest and best developed Wright County baby, and it is known he secured prize medals for a baby show in the following year. He participated in the post-mortem examination of a shot man in 1888 and was a witness in the trial.

Dr. Chilton read much and kept abreast of developments in medicine. In 1895 he took a post graduate course at the School of Surgery in New York City.

In Howard Lake he had a fine reputation as a good doctor, well qualified in his profession, deserving and getting the confidence of the people he served. He also was active in politics. In 1898 he was elected to the Minnesota State Senate and served a full term. He was Chairman of the Committee for the State Hospital for the Insane and did good work. He belonged to several fraternal societies at Howard Lake. He married Laura J. Huttleston, also a native Kentuckian, and they raised a family of four children, one of them Dr. Leo Chilton, who graduated from the University of Minnesota Medical College in 1904, and practiced in John Day, Oregon. The others were Jesse, Alice and Freeman. After Mrs. Chilton died he married a second time - Grace Hayes Tomley, born in Mount Vernon, Jefferson County, Illinois - and there were two children from this marriage: Walter Hayes and Madge Elizabeth.

Dr. Chilton was a physician of the old school, dignified, clean living and a credit to the profession. When Dr. J. J. Catlin was a boy, he watched Dr. Chilton do an intubation on a child apparently dying from strangulation with diphtheria. The child improved and recovered. Diphtheria was one of the killers in those days and deaths were very frequent during epidemics.

In 1886 he was one of three physicians in Howard Lake, the others being Drs. Davis and Wright. In 1890 Dr. Ball also had located there. In 1898 and 1900 apparently only one physician was there besides Dr. Chilton — Dr. Moffatt.

Dr. Chilton died May 24, 1914 at Howard Lake after practicing there thirty-four years. During this time he fought a physical disability which also had made his work more fatiguing; he doubly deserved credit for successful work in a county practice, with most of one lung collapsed.

Edwin Young Clinton, came to Minnesota in 1880, settling in Howard Lake. He was born in Barkesville, Kentucky and graduated from the Miami Medical College in 1874. From 1899 to 1903 he was State Senator. Nothing more is known about him. He was not licensed in Minnesota.

Dr. Collins,* although his first name is not known, apparently practiced in Wright County for some time. In 1866 *The Northern Statesman* (April 21st) wrote "Persons wishing the services of a good physician and surgeon, can not do better than by calling Dr. Collins. Office in Drugstore, lower town" (Monticello). *The Wright County Times* of November 26, 1874 states that "Dr. Collins who practiced in Monticello several years ago" passed through the town on his way to Clearwater. There he associated with Dr. J. D. Wheelock as indicated by the card "Wheelock and Collins" which appeared in the newspapers during the first half of 1875. He later moved to Grand Forks, Dakota Territory; he was there around 1880 and 1881.**

Continued

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*The "Official Register, Physicians in Minnesota, 1883 — 1890" lists five physicians with the name Collins. Drs. Homer Collins and Wallace James Collins graduated in 1884 and 1886 respectively and therefore do not come in question. Of the remaining three Dr. Daniel B. Collins graduated in 1871 and practiced in St. Peter during the 1890's; Dr. Daniel F. Collins graduated in 1873 and practiced in Hinckley in 1890 and later in Superior, Wis. The most likely one is Dr. E. E. Collins who graduated from the University of the City of New York in 1857, was licensed in Minnesota on April 22, 1884 and was listed in Duluth from 1890 until the first decade of this century.

**The Wright County Eagle, January 6, 1881.

Relieves
Anxiety
and
Anxious
Depression

The outstanding effectiveness and safety with which Miltown relieves anxiety and anxious depression—the type of depression in which either tension or nervousness or insomnia is a prominent symptom — has been clinically authenticated time and again during the past six years. This, undoubtedly, is one reason why physicians still prescribe meprobamate more often than any other tranquilizer in the world.

Miltown®
meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS® — 400 mg. *unmarked*, coated tablets; and in *sustained-release* capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

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Clinically proven
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1 Acts dependably — without causing ataxia or altering sexual function

2 Does not produce Parkinson-like symptoms, liver damage or agranulocytosis

3 Does not muddle the mind or affect normal behavior

George P. Connolly, a homeopath, was listed in Rockford in 1898 and 1900. He graduated from the Hahnemann Medical College, Chicago in 1887. He is no longer remembered by residents of Rockford.

Dr. Connolly was born in Minneapolis May 28, 1859. Although he graduated in 1887, he was not licensed in Minnesota until October 11, 1898. He supposedly practiced twenty-three years in Minneapolis prior to his retirement which took place thirteen years before his death, June 5, 1943. If these figures are correct, he practiced in Minnesota forty-three years, not forty-five as stated in his obituary. † He died from heart disease at the age of eighty-four.

†**Journal-Lancet**, August, 1943.

Franklin Judson Cressy, practiced in Howard Lake from shortly after his graduation in 1877 until 1880 when he moved to Granite Falls, Yellow Medicine County. An item in the *Rochester Post* of March, 1877 stated that he had entered into a formal partnership with Dr. Knowles of Howard Lake‡ Dr. Cressy was born in Greenfield, Franklin County, Massachusetts July 5, 1849. In 1858 the Cressy family came to Minnesota, where they settled on a farm in Olmsted County. He could not get much education until he was twenty. After a meager schooling he read medicine with Dr. H. Galloway of Rochester, then went to Ann Arbor, Michigan and received his medical degree from the College of Physicians and Surgeons at Keokuk, Iowa. He graduated in 1877. In 1879 he married Miss Fannie M. Taylor of Howard Lake. It seems that the marriage of his sister to Dr. Florado Wellcome of Granite Falls was the deciding factor for Dr. Cressy's move to that town.*

‡"Medicine and its Practitioners in Olmsted County prior to 1900" by Nora H. Guthrey, **Minnesota Medicine**, June, 1950, p. 606.

Dr. Cressy is remembered in Yellow Medicine County for his aristocratic looks and bearing and was highly regarded as a physician. He also was a graduate pharmacist and ran a drugstore in connection with his medical practice. He was licensed in Minnesota in 1877. Because of the shortness of his stay in Wright County he was not an important physician there as compared to his record in Yellow Medicine County.** He died in St. Paul June 26, 1916 at the age of sixty-seven.

Willis W. Creswell, practiced for a short time in Waverly in 1901. He was born in Andes, New York in 1872 and graduated from the College of Physicians and Surgeons of Minneapolis (Hamline University) in 1897. He was licensed in the same year. In 1927 he lived in Newark, N. J.

Gustaf William Dahlquist, practiced in Cokato from 1898 to about 1905. He was the son of Alexander Dahlquist and Wilhelmina Ecklund and was born in Sweden June 25, 1863. After his graduation from the University of Minnesota in 1893 he practiced in Adams, Mower County from 1893 to 1898 when he moved to Cokato, although it seems that he was for a while in Hayward, Wis. in 1895. He was reasonably successful in his practice and took interest in local affairs. He served on the Cokato School Board. It appears that around the turn of the century he practiced for a time in Litchfield, Meeker County, because in 1900 he published an article, "A few facts about pleurisy" (*Northwestern Lancet,* Vol. 20, 1900, pp. 166-169)* in which Litchfield is given as his location. If this is correct, he was there for a very short period because he is listed in the same year in Maple Lake with Dr. T. O'Connor. In Maple Lake, too, his stay must have been extremely short, as he is no longer remembered there. In 1903 he was in Bottineau County, No. Dakota; in 1904 in Dassel, Meeker County, and from 1907 to 1917 he practiced in Lancaster, Kittson County. In 1917 he

Continued

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*He apparently had planned to move to Nebraska. (**The Wright County Eagle**, March 4, 1880.)

"Medical History of the County of Yellow Medicine" by Mildred E. Lee, **Minnesota Medicine, November, 1953, pp. 1161-62.

*He had read this paper before the Crow River Valley Medical Society at Cokato on April 4, 1900.

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spasm is

tractable

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Low back pain and other skeletal muscle spasms are tractable disorders when you treat them with Trancopal, the relaxant that quickly eases the spasm and gets the muscle moving. You have a more tractable patient with Trancopal, too—its mild tranquilizing action makes him less irritable, better able to bear his discomfort, more willing to cooperate in physiotherapy.

These two complementary actions of Trancopal are commented on in many recent reports; e.g., Kearney[1] states: "...Trancopal has proven to be an extremely effective striated muscle relaxant and subcortical tranquilizer." Cornbleet,[2] discussing the use of Trancopal in dermatologic practice, comments: "Noteworthy was the soothing effect of chlormezanone without interference with normal activities or alertness... Patients were found more tractable and easier to control."

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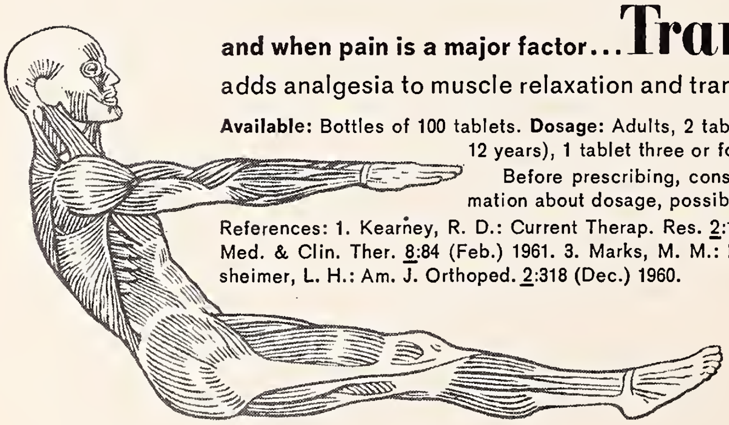

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Available: Bottles of 100 tablets. **Dosage:** Adults, 2 tablets three or four times daily; children (5 to 12 years), 1 tablet three or four times daily.

Before prescribing, consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

References: 1. Kearney, R. D.: Current Therap. Res. 2:127 (April) 1960. 2. Cornbleet, T.: Antibiotic Med. & Clin. Ther. 8:84 (Feb.) 1961. 3. Marks, M. M.: Missouri Med. 58:1037 (Oct.) 1961. 4. Hergesheimer, L. H.: Am. J. Orthoped. 2:318 (Dec.) 1960.

Winthrop **LABORATORIES**
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enlisted in the Armed Forces where he served until the end of the war.** Then he returned to Lancaster and after a few years he moved to Fargo, North Dakota to serve on the staff of the Veterans Administration; this he did for ten years. He returned to Lancaster in the early 1930's and retired later in that decade — not later than 1940. After that he lived in St. Paul and in Burke, Idaho. He died in the Minnesota Soldiers Home in Minneapolis on October 25, 1950, eighty-seven years old and was buried in the National Cemetery. His wife, Elizabeth G. (Duncan), had died during the preceding winter. He was survived by six children. He was a member of the Minnesota State Medical Association.

Oscar Daignault, was listed in Maple Lake in 1900 with Dr. T. O'Connor. He graduated from the Ecole de Medecine, Montreal, Canada in 1890 and was licensed in Minnesota on June 22, 1899. It seems he remained in Maple Lake only a short time and then moved to Benson, Swift County, because when he retired May 1, 1948 it was stated that he had practiced in Benson for forty-eight years. He was born in Montreal, Canada on September 13, 1875.

Alvin Monroe Davis, came to Howard Lake about 1884. He was a physician of the "regular school," having graduated from Miami Medical College, Cincinnati, Ohio in 1874. He came to Howard Lake from Winsted, McLeod County.

In 1885 he bought the home of Richard Knights. In the same year he took a trip to the East. It seems his services were appreciated in the county as his practice extended into the area surrounding his residence. In 1888 he, with Drs. Cassel and Chilton, did post-mortem examinations and testified in two manslaughter cases.

He seems to have practiced in Howard Lake about ten years. He is no longer listed there in 1898 and no further record is found of him. Dr. Davis was a member of the Crow River Valley Medical Society in 1884 and was a signer of its Articles and By-laws. At the meeting in March of that year he was elected recording secretary and he read a paper on Diphtheria.

Dr. Davis was born in Pennsylvania April 12, 1851. He was licensed in Minnesota October 11, 1883. He died in Akeley, Minn. July 15, 1923.

Seward Eugene Dean apparently came to Wright County very early in 1881. He graduated from Hahnemann Medical College, Philadelphia, Pennsylvania, in 1880.† In June of that year he was in Watertown, Carver County. Mrs. Dean was a former resident of Dean Lake, in the western part of Rockford Township. In the beginning of March, 1881 he was reported as a resident of Rockford. It seems he planned to move to Montana, but did not carry out this plan as his professional card continues to appear in the newspapers. In April, 1881 he associated with Dr. R. O. Cady of Buffalo and the ads read, "Drs. Cady and Dean." A newspaper explained that Dr. Cady's large practice made an assistant necessary. He was coroner in 1882 and as such came to Delano to investigate a case of drowning. When Dr. Cady went away for a while that summer, Dr. Dean looked after the practice and the drugstore alone.

At the end of March, 1882 the card of Drs. Cady and Dean disappears from the newspapers. It seems Dr. Dean and his wife had moved to Dakota, because early in January, 1884 "he was temporarily practicing in Buffalo but will return to Dakota in spring."‡ He apparently was undecided where he wanted to settle but in December, 1885 we read that "Dr. Dean is here (Buffalo) once more and is finally settled. Office in the front room of his mother's residence, formerly C. E. Oakley's home." In August, 1886 he left again for Dakota, and there were reports that he was seriously injured in a storm. He shuttled between Buffalo and Dakota, where, it seems he was interested in farming.

All in all, he apparently was not particularly successful in building up a practice. Later he moved to Minneapolis.

Continued

**His death certificate seems in error when it states that he was in the Armed Forces from August 5, 1918 to December 4, 1918.

†A newspaper item states that he was a graduate of Castleton College and attended lectures and several courses at one of the best medical schools of Philadelphia. (**Wright County Eagle,** April 24, 1881.)

‡**Wright County Eagle,** January 3, 1884.

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BUILDS *sense of well-being in the weak and debilitated*

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BRAND OF STANOZOLOL

new physiotonic

NOW—the **highest** anabolic plus the **lowest** androgenic activity* with well-tolerated WINSTROL therapy

...for elderly patients with anorexia, asthenia and general debility—
MARKED IMPROVEMENT IN APPETITE, STRENGTH AND SENSE OF WELL-BEING

Fourteen patients, age 66 to 77, treated with Winstrol, usually in a dosage of 6 mg. daily, for various periods in order to correct underweight, weakness and chronic fatigue. Marked improvement occurred in appetite, sense of well-being and strength; almost all patients gained weight.

...for patients with osteoporosis and arthritis—
RELIEF OF PAIN, IMPROVEMENT IN MOBILITY

Twenty-one patients with arthritis treated with Winstrol for pain and limited mobility due to osteoporosis. With few exceptions, dosage was 6 mg. daily; duration of treatment varied from a few weeks to 6 months. In 8 patients relief of symptoms was excellent and in 6 moderate. Of the 7 persons in whom no relief was obtained, 5 had received treatment for less than one month and some had been given doses below 6 mg.

...for patients with malignant disease—
NOTABLE WEIGHT GAINS, INCREASED APPETITE AND SENSE OF WELL-BEING

Twenty-six patients, mostly women, weak, emaciated and seriously ill, were administered Winstrol in dosage of 6 mg. daily for periods extending up to 14 months (average 6.7 months). Notable weight gains occurred. Patients showed increased appetite, alertness and confidence, better appearance, increased mobility and tolerance to pain.

...for patients with chronic, non-malignant disorders—
IMPROVEMENT IN WEIGHT AND GENERAL ACTIVITY, INCREASED SENSE OF WELL-BEING

Eight patients with advanced tuberculosis, bronchopulmonary disease, nephritis and ulcerative colitis treated with 6 mg. of Winstrol daily for from 3 to 4 months. Gains in weight varied from 6 to 27 pounds with increased sense of well-being and improvement in general activity.

...for undernourished, underweight children and adolescents—
NOTABLE IMPROVEMENT IN APPETITE AND OUTLOOK, MARKED INCREASE IN WEIGHT AND HEIGHT

One hundred and twenty children, age 1 to 11 years, underweight and in poor health, were given Winstrol for several months. Majority received daily dosage of from 2 to 4 mg. In nearly all, appetite was improved. Over 70 per cent showed significant gains in weight of from 5 to 17 pounds.

DOSAGE: Usual adult dose, one 2 mg. tablet t.i.d. just before or with meals; children from 6 to 12 years, up to 1 tablet t.i.d.; children under 6 years, ½ tablet b.i.d. Available in bottles of 100 tablets.

Complete bibliography and literature available on request. Before prescribing, consult literature for additional dosage information, possible side effects and contraindications.

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*animal data

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Dr. Dean was licensed on December 31st, 1883 when the medical practice act went into effect. Mrs. Dean must have been a cultured person as she is mentioned as reading at social club entertainments. It seems that Dean Lake was named after H. S. Dean, Dr. Dean's father, because Mrs. H. S. Dean sold her homestead and farm on this lake in 1882 for a large sum, "the best stock farm in town."* At least there is no contradictory evidence.

H. W. Dickinson, of Rockford, "hangs out his shingle at the Continental" is announced by *The Eagle* of Delano May 15, 1879. During a measles epidemic in July of the same year we learn that the "measles are having a large run. Dr. Dickinson is very busy" with his practice in the village and in the country. In August he married Adelia H. Watrous of Batavia, N. Y. He must have had a good educational background as he read essays at the literary society. The one on character "deserves more than a passing good word" stated the newspaper. In October, 1879 he announced a lecture on anatomy. Dr. Dickinson remained in Rockford until at least September, 1880. Nothing further is known of him. He was not licensed in Minnesota.

H. S. Donoho, came to Rockford in 1868 to associate with Dr. J. S. Richardson. His career was cut short at the tragically young age of twenty-five when he died from acute pulmonary tuberculosis in April, 1869. He was a graduate of McDowell Medical College of St. Louis, Missouri. In Minnesota he located first in Chaska, Scott County, in September, 1868, but left there after a stay of only two months, moving to Rockford.**

Stephane S. Dulude, came to Buffalo in 1899, a year after his graduation and practiced there until 1902. For a while he was at Argyle, Marshall County, and in Waverly, Wright County.*** In the latter town he lived and had his office at the Waverly Hotel. In 1903 he moved to Winsted, McLeod County and remained there until 1913. Then he practiced four years in Minneapolis and in 1917 moved to Dassel, Meeker County, where he practiced for almost twenty-three years, and died May 12, 1940. He was a member of the Kandiyohi-Swift-Meeker County Medical Society and the Minnesota State Medical Association.

Dr. Dulude was born in Montreal, Canada April 7, 1874. His parents were Alexis Dulude and Ferdinanda Valle, both native Canadians. He received his medical education at the Montreal School of Medicine (Laval University) and graduated in 1898. He interned at McGill. He was licensed in Minnesota January 10, 1899 and in the same year he entered into practice in Buffalo. When he located in 1917 in Dassel it was his sixth location.

Dr. Dulude married twice. He married his first wife, Corinne Dahn in 1898 or 1899 and they had one daughter. In 1914 he married Clara Boylan with whom he had six children. His second wife died in 1934.

He was considered a competent practitioner and had an attractive personality. His friends and patients considered him "a genial, kindly soul" and he gave his patients good medical service until he became an alcoholic.

During his last years he apparently was a drug addict and half a year before his passing, his license was suspended. He died from a coronary thrombosis at the age of sixty-six and was buried at Darwin, Meeker County, in the Catholic cemetery.

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*__Wright County Eagle,__ May 25, 1882.

See "A History of Medicine in Scott and Carver Counties," **Minnesota Medicine May 1948, p. 516.

***It has not been ascertained when he practiced in Argyle and Waverly. According to some information he was in Argyle in 1905, in Winsted, McLeod County, in 1909, but these years apparently are not correct.

(TO BE CONTINUED)

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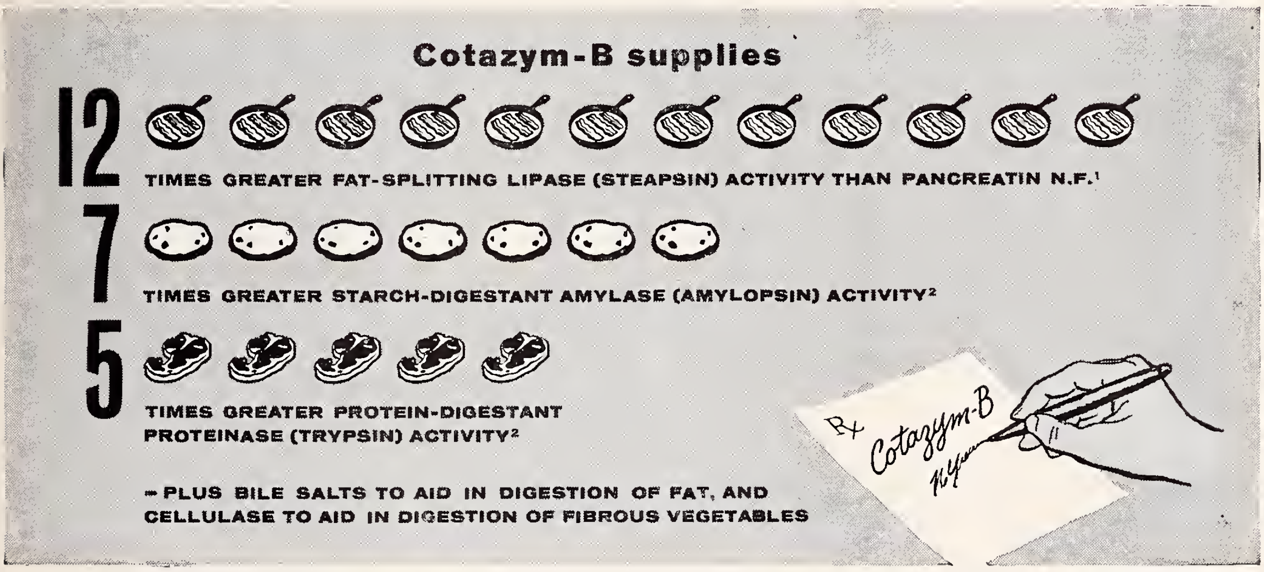

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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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comments: "In practically every instance... the patients experienced relief from dryness and pruritus."

STUDY 2 *Lubowe, I. I.: Western Med. 1:45, 1960.*

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STUDY 3 *Weissberg, G.: Clin. Med. 7:1161, 1960.*

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- contact dermatitis
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Board of Medical Examiners

MINNEAPOLIS WOMAN, 72,
SENTENCED TO SERVE FIVE YEAR TERM
UPON FIFTH CONVICTION
FOR ABORTION

Re* State of Minnesota -vs- Alma Dora Peterson

On April 19th, 1962 Alma Dora Peterson, 72, 974 Bryant Ave. N., Minneapolis was sentenced for the crime of abortion by the Hon. Leslie L. Anderson, Judge of the District Court of Hennepin County, to serve a term of not to exceed five years in the State Reformatory for Women at Shakopee, Minnesota. On April 5th, 1962 Mrs. Peterson had pleaded guilty before Judge Anderson to the abortion charge and also to an information charging her with having three prior convictions for felonies. Although the defendant has four prior felony convictions, she was not charged with having more than three since in either event she could be sentenced to life imprisonment.

Mrs. Peterson was arrested by Minneapolis police on March 28th, 1962 as a result of an investigation which was begun when a report was received from the Chicago, Illinois Police Department that a 21-year-old Minneapolis secretary, upon whom an illegal operation had been performed, had been hospitalized in a Chicago hospital after collapsing at a downtown hotel. The defendant admitted in a written statement that she had performed the abortion at the patient's Minneapolis apartment on March 2nd, 1962 by means of inserting a catheter. She also said that she had placed a knitting needle inside of the catheter in order to make it possible to guide it. On the same date Mrs. Peterson was paid the sum of $200 in cash for her services. Two days after the fetus was expelled the victim resumed her secretarial work and felt no ill-effects for two weeks until she suffered a hemorrhage while on a visit to Chicago on March 18th.

Mrs. Peterson, who has no medical training, has been sentenced four times in the past in Hennepin County District Court on abortion charges. On the first two occasions, on December 21, 1934 and February 21, 1944, she was placed on probation. However, on April 12th, 1948 District Judge Levi M. Hall sentenced the defendant to serve a term of one year in the Minneapolis Women's Detention Home. On June 24th, 1955 Mrs. Peterson, after pleading guilty to the crime of abortion and also to an information charging her with having three prior felony convictions, was sentenced on the same date by District Judge Earl J. Lyons to serve a term of not to exceed two years in the State Reformatory for Women. The defendant holds no license to practice any form of healing in the State of Minnesota.

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Meetings and Announcements

JUNE

Wisconsin Society of Pathologists Summer Meeting at Eagle Waters Resort in Eagle River, Wisconsin June 15-16. Contact: Dr. David Carlson, Milwaukee Hospital, Milwaukee, Wisconsin.

American Geriatrics Society's 19th annual meeting June 18-20, Chicago, Palmer House. Contact: Henry Blanchard, American Geriatrics Society, 10 Columbus Circle, New York.

Medical Library Association is offering a Medical Librarianship Course at Emory University, Atlanta, June 18-July 27. Contact: Medical Library Association, Chicago. Also a course entitled "Bibliography of the Biomedical and Physical Sciences" will be offered at the University of Southern California, Los Angeles, June 25-August 3.

American Rheumatism Association annual meeting, June 21-22, Edgewater Beach Hotel, Chicago. Postgraduate Course on Rheumatic Diseases will be held on June 23-24 at the Edgewater. Contact: The Society in Chicago.

American College of Chest Physicians Annual Meeting, Chicago, June 21-25, Morrison Hotel. Contact: Murray Kornfeld, College of Chest Physicians, Chicago.

American Medical Women's Association brunch June 23, 11:00 A.M. at the Essex Inn, Chicago. Contact: Association in New York.

American Association for the Study of Headache, Annual Meeting, June 23, Palmer House, Chicago. Contact: Dr. Bayard Horton, Mayo Clinic, Rochester.

10th Annual National Conference on Disaster Medical Care in Chicago, June 23. Contact: Department of National Security, AMA, Chicago.

American Medical Association and American College of Chest Physicians will hold a combined scientific session at McCormick Place, Chicago, June 25th. Contact: American College of Chest Physicians, Chicago.

American Medical Association 111th Annual Meeting, McCormick Place, Chicago. June 24-28. Contact: AMA, Chicago.

JULY

University of Colorado School of Medicine Conference on "The Management and Rehabilitation of Patients with Arthritis" July 5-7 in Denver. Contact: the University.

American College of Chest Physicians postgraduate course "Cardiopulmonary Problems in Children," in Chicago, Edgewater Beach Hotel, July 23-27. Contact: Murray Kornfeld, Executive Director, Chicago.

Eighth International Cancer Congress July 22-28, in Moscow. Contact: American Tourist Bureau, 30 W. Washington St., Chicago.

Chicago Diabetes Association Summer Camp for diabetic children July 15-August 5, at Holiday Home, Lake Geneva, Wisconsin. Contact: Chicago Diabetes Association, 620 North Michigan Avenue, Chicago.

Summer Convention of the Colorado Ophthalmological Society, July 9-12, Estes Park, Colorado, the Stanley Hotel: Contact: Ophthalmological Society, 4200 E. 9th Avenue, Denver, Colorado.

16th Annual Rocky Mountain Cancer Conference, July 13-14, Brown Palace West Hotel. Contact: Rocky Mountain Cancer Conference, 1809 E. 18th Avenue, Denver.

AUGUST

University of Colorado School of Medicine Postgraduate Course on Pediatrics August 6-10, Estes Park, Colorado. Contact: The University.

Second National Northwest Summer Conference "The Special Child in Century 21" to be held in Seattle, August 28-September 1, at the Health Sciences Auditorium of the University of Washington. Contact: Jerome Hellmuth, 113 Madrona Place East, Seattle.

ANNOUNCEMENTS

Applications for certification of the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination in Part II are now being accepted. Deadline date: July 1, 1962. Contact: Robert Faulkner, 2105 Adelbert Road, Cleveland.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

Two courses in Rhinology to be presented at Leiden University, Holland, July 4-6, 1963 in cooperation with the American Rhinologic Society.

Junior and Senior medical students are invited to submit entries to the Annual Walter Reed Memorial Essay Competition of the Brooklyn Hospital. First prize $1,000. Closing date for entries will be March 1, 1963. Essays should be 5,000 to 10,000 words in length and submitted in triplicate. Contact: Abraham G. White, M.D., Brooklyn Hospital, Brooklyn, New York.

The Gillette State Hospital for Crippled Children has announced that simple cleft lip and palate surgery unaccompanied by additional orthopedic problems will not be attended at Gillette State Hospital.

Physician's Diary

DR. JESSE E. EDWARDS' book "An Atlas of Acquired Diseases of the Heart and Great Vessels" was selected by a committee of jurors of the 17th annual Philadelphia Book Show as an example of good book design and manufacture. Dr. Edwards is the director of laboratories of the Charles T. Miller Hospital, St. Paul.

* * *

DR. HAROLD R. ADAMS of St. Paul and **DR. MELVIN PALMER BAKEN** of Minneapolis recently received their certificates of certification from the American Board of Obstetrics and Gynecology.

* * *

DR. H. O. MORTENSON of Menahga and **DR. H. L. HUFFINGTON** of Waterville recently attended the Annual Scientific Assembly of The American Academy of General Practice in Las Vegas.

* * *

DR. WILLIAM E. WELLMAN, consultant in internal medicine at the Mayo Clinic, has been appointed to the Governor's Citizens Council on Aging by Governor Elmer L. Andersen.

* * *

DR. FRANK KIESLER, director of the Tri-County Mental Health center in Grand Rapids, was guest speaker at the Range Medical Society meeting recently.

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DR. ARNOLD I. RAJALA was recently appointed president and chief of the Itasca Memorial hospital medical staff. **DR. D. J. COY** is secretary and **DR. R. W. BROCKWAY** is vice president.

* * *

DR. ANTHONY J. BIANCO JR., orthopedic surgeon at the Mayo Clinic was guest speaker at the Rochester's Rotary meeting. Dr. Bianco's subject was "Medical Aspects of Automobile Safety."

* * *

DR. E. OSTERGAARD has joined the Elbow Lake Clinic staff. Dr. Ostergaard before joining the staff was at the Rock Point Mission in Arizona.

* * *

DR. R. A. MAC DONALD has left Littlefork to practice in Grand Marais. **DR. DAVID MCQUOID** of St. Paul will join **DR. R. G. ROWE** in Littlefork.

* * *

DR. ARTHUR M. OLSEN, head of a section of medicine in the Mayo Clinic, was elected president of the American Society for Gastrointestinal Endoscopy, in April.

* * *

A public health service grant to study new aspects of the physiology of the respiratory epithelium has been made to **DR. ANDERSON C. HILDING,** St. Luke's Hospital, Duluth. The grant, totalling $121,213.00 extends over a period of three years, and Dr. Hilding hopes in these studies to perhaps clarify the reason why malignancy localizes in the large bronchi by predilection and to further elucidate the manner in which cigarette smoke and other air pollutants are deposited in the bronchial tree.

* * *

DR. JOHN F. SHRONTS, medical director of General Mills, Inc. was named Second Vice President of the Industrial Medical Association at their annual business meeting held in Chicago.

* * *

DR. ERWIN O. STRASSMANN, former Mayo Foundation president, who now practices obstetrics and gynecology in Houston, Texas, presented a book of historical value to the Mayo Clinic Library. The book, a first edition of Vesalius' De Humani Corporis Fabrica, was printed in 1542.

* * *

DR. R. L. ENGWALL of Tyler recently attended a State Medical Association Speakers' Bureau workshop in Minneapolis.

* * *

DR. MALCOLM MCCANNEL, Minneapolis ophthalmologist, literally brought **PROJECT HOPE** (Health Opportunities for People Everywhere) alive when he spoke to members and friends of St. Gabriel's Hospital Auxiliary in St. Joseph's Hall in Little Falls. Dr. McCannel spent two months in Indonesia in early 1961 serving with HOPE.

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WANTED: Physician for Moose Lake State Hospital. Previous experience in psychiatry not necessary. Salary $9,012-$10,956 plus living quarters, heat, light. State employee benefits include Social Security, state retirement, annual vacation and sick leave. Contact Superintendent, Box 188, Moose Lake, Minnesota.

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LOCUM TENENS wanted for last half July, August, or September. Also interested in permanent partner. Brand new clinic; salary open. Contact T. H. Lester, M.D., Browns Valley, Minnesota.

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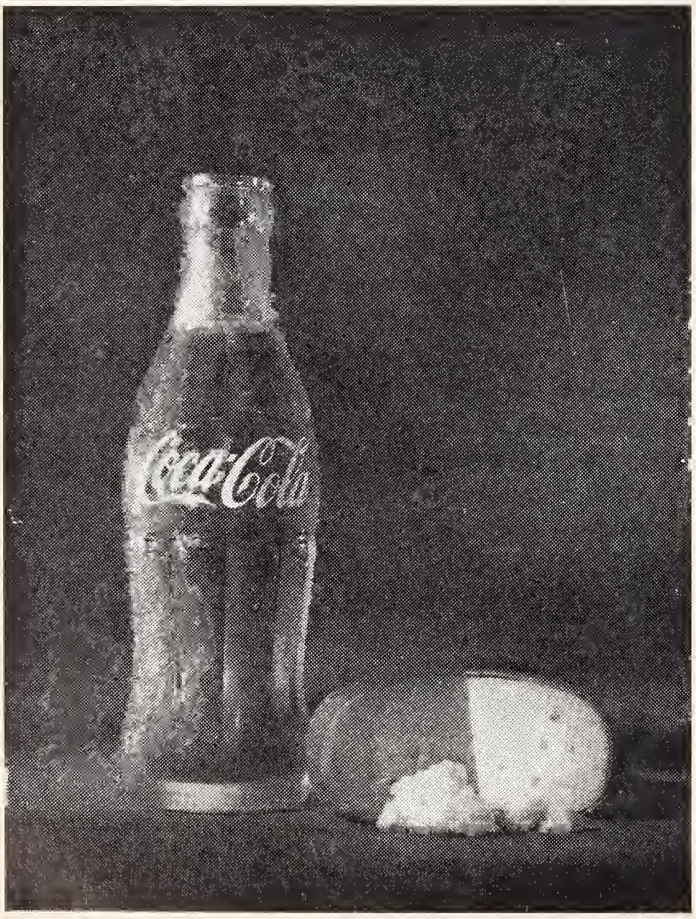

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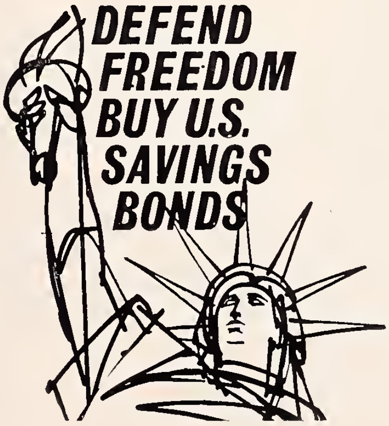

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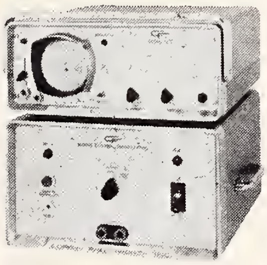

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References: (1) Minchew, B. H., & Cluff, L. E.: *J. Chron. Dis.* **13**:354, 1961. (2) Wallmark, G., & Finland, M.: *Am. J. M. Sc.* **242**:279, 1961. (3) Wallmark, G., & Finland, M.: *J.A.M.A.* **175**:886, 1961. (4) Welch, H., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 14. (5) Hodgman, J. E.: *Pediat. Clin. North America* **8**:1027, 1961. (6) Bauer, A. W., Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* **173**:475, 1960. (7) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* **105**:398, 1960. (8) Goodier, T. E. W., & Parry, W. R.: *Lancet* **1**:356, 1959.

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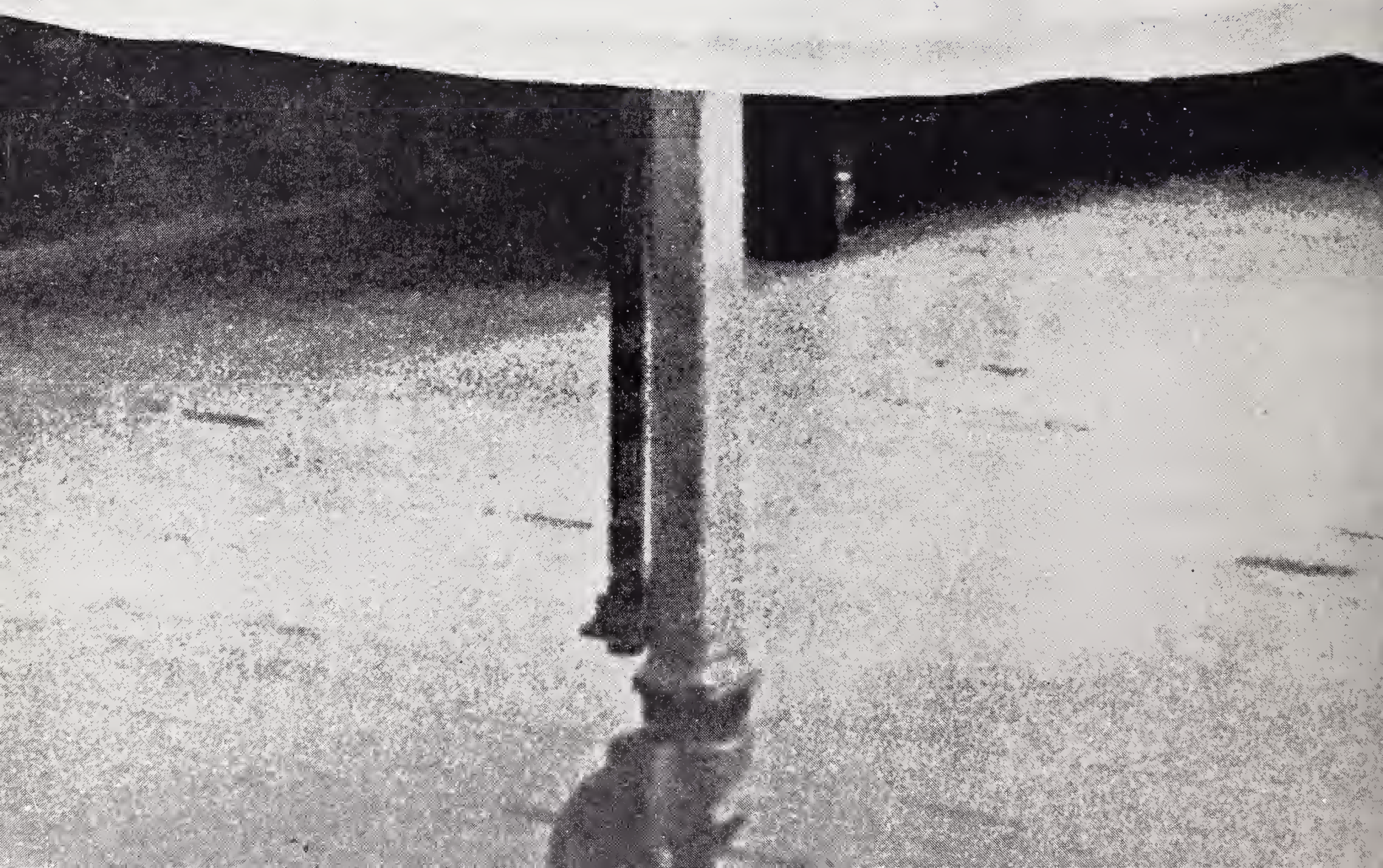

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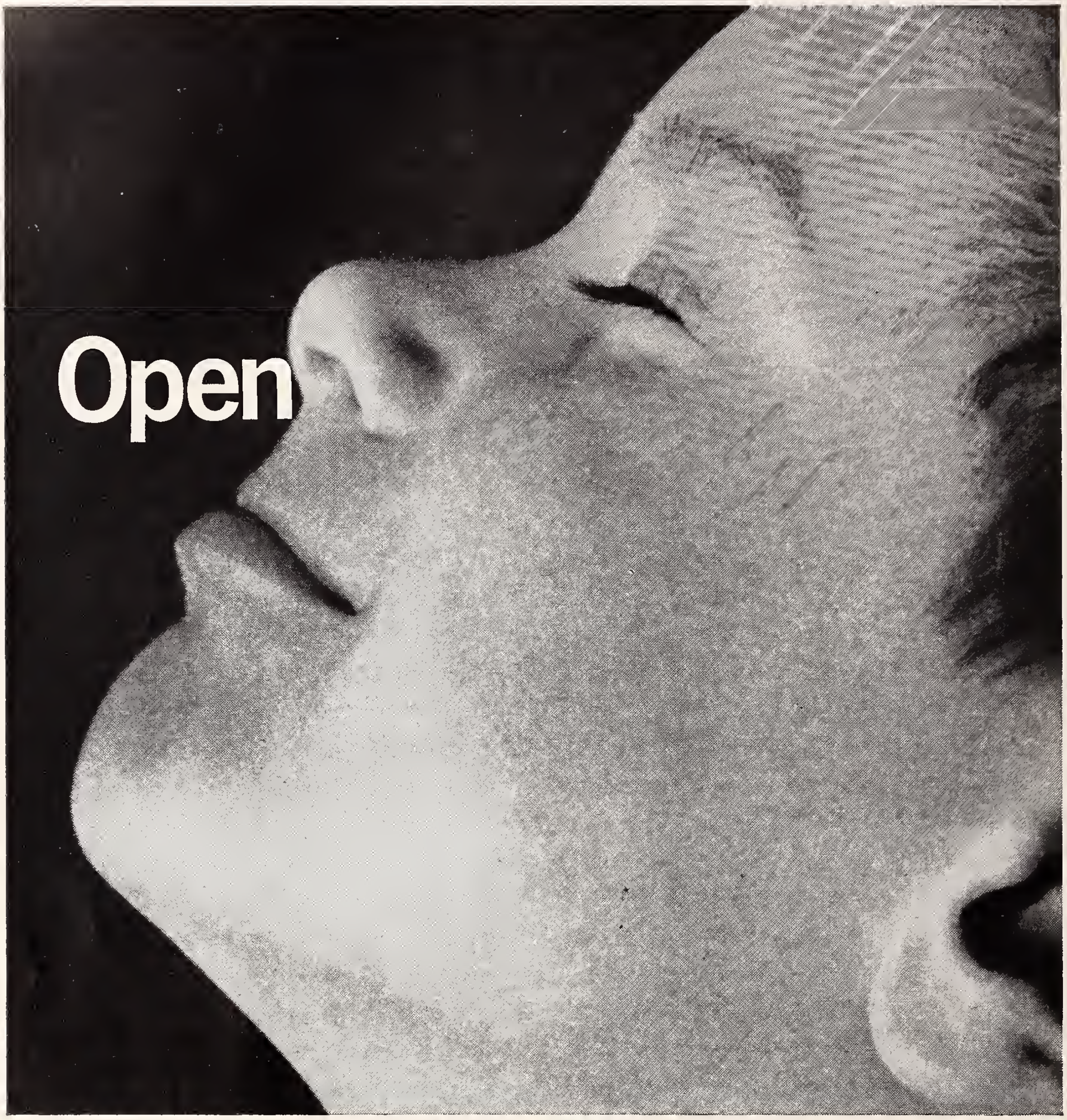

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President's Letter

A REVIEW OF ANNUAL MEETING

"It was a good show," a colleague observed in considering the recently concluded annual meeting of our state association. We learned a lot, we accomplished several things and we had a good time. Our Minneapolis hosts were most gracious.

Concerning the scientific program, there was generally good attendance, almost unique in the experience of many state medical associations. A review of attendance figures suggested that an average of more than 435 physicians were present each day at the scientific sessions. The total attendance figure was 2,720 including nurses, interns, auxiliary members, medical technicians and scientific and technical exhibitors. The format of the symposium was such that it provided ample opportunity for discussion. It was popular and proved to be a most effective educational device. The "Fireside Conference" was excellent and was similarly well attended. The concept of entertainment at the annual banquet, in addition to our customary practice of honoring distinguished members, seemed well received.

As for the organizational activities of our state association, much work again was carried out in committees, in the Council and in the House of Delegates. Many controversial subjects were considered.

The question of care of the aging was foremost in our minds as a result of the perfervid campaigns for proposed legislative programs through which medicine is now being importuned to countenance radical changes in that which already is good and is continually improving. Minnesota physicians have always taken care of the aging and, indeed, of anyone else who seeks medical care. We shall continue to do so regardless of the system under which we may be obliged to provide such care. This assurance does not, however, reflect a change in our belief that free enterprise, much more than compulsory schemes for health care, offers greater rights and privileges to patients who need the type of care in question. We have reaffirmed our previously stated position that Kerr-Mills legislation, if enacted in our state, would best assist the occasional family which, except for a devastatingly serious or prolonged illness, is quite able to provide for its needs. We believe that the proposed King-Anderson legislation is ill advised and have so declared in a resolution adopted by our House of Delegates.

In other actions, the House of Delegates urged that the 1961 law placing responsibility for our state mental hospitals in the hands of a lay administrator be revised to assure that care of patients in such institutions will be under the jurisdiction of a qualified psychiatrist serving as administrator and chief medical officer. The relative-value schedule employed in California again was adopted for the current year, modified, however, with respect to the values of therapeutic radiology. Rising costs of the widespread activity of our state medical asssociation have seriously reduced our operating funds, despite the institution of every possible economy and after a complete review of expenditures. To curtail our work further would jeopardize many fine projects which we have undertaken. After discussion, the House of Delegates approved a $20.00 increase in our annual dues. We may point out, although this fact was not the reason for the increase, that our state dues have been substantially lower than those in all surrounding states and that despite this increase they remain so.

Many other actions were undertaken at the annual session, these representing the concerted opinion and thinking of Minnesota physicians. A detailed report will be presented to members through their delegates and councilors.

It is not too soon to be planning to attend the 1963 meeting in Duluth. There, too, one will be certain to find a valuable experience.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association

a look at the literature
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Emergency Resuscitation in Chronic PULMONARY DISEASE

DAVID T. ELLIS, M.D.*
Minneapolis, Minnesota

The general management of patients with chronic pulmonary disease has improved during recent years. Emergency resuscitation is still needed and should be understood by all physicians. This informative report will be useful to all practicing clinicians.

ONE OF the most common forms of pulmonary insufficiency is the acute obstructive pulmonary crisis which occurs in the advanced stages of obstructive emphysema and asthma. Understanding the pathophysiology aids in the prompt recognition of these medical emergencies. Early diagnosis of pulmonary obstructive crisis is important, since at this point adequate function may be restored by standard methods. In advanced pulmonary insufficiency the patient is often beyond the reach of conventional therapy; however, by carrying out certain emergency procedures the mortality rate in this grave situation may be lowered.

Pathophysiology

The precipitating factors leading to obstructive pulmonary crisis are most commonly bronchial infections or severe asthma, which tend to produce increased amounts of viscid secretions, mucus plugs, bronchospasm and edema of the bronchiolar mucosa.[1] The resulting impairment of alveolar ventilation will lead to elevation of the arterial pCO_2 with a decrease in the arterial oxygen saturation and pH.[2] The already impaired ventilatory function may be further aggravated by depression of the respiratory center with narcotics, or by the elimination of the hypoxic stimulus to respiration by the administration of oxygen.[3] The respiratory centers are normally exquisitely sensitive to small changes in the arterial pCO_2; however, in the emphysematous subject this sensitivity is far less acute.[4] The resulting increases in arterial pCO_2 are apt to be extreme, eventually depressing the respiratory center. The remaining stimulus to respiration results from the effects of anoxia on the chemoreceptors in the aortic and carotid bodies. The administration of high concentrations of oxygen will correct the anoxia but will reduce the hypoxic stimulus to respiration, resulting in further hypoventilation and CO_2 retention.

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A serious complication of acute respiratory failure is the development of acute anoxic cor pulmonale.[5-7] These patients with chronic lung disease frequently have a loss of pulmonary vascular cross section, which, during periods of respiratory insufficiency, is combined with hypoxia and hypercapnia to produce abnormal resistance to pulmonary blood flow. Exercise and infection will increase blood flow, thus aggravating the pulmonary hypertension.[8-10]

Hypoxia and hypercapnia are the most likely precipitating factors in acute anoxic cor pulmonale and are of special importance since they represent potentially reversible states.[10-11] If they are not corrected, they will lead to increased cardiac work associated with severe myocardial ischemia which accelerates the development of heart failure. When the right heart fails, the cardiac output will gradually fall, representing a terminal event which indicates biventricular heart failure caused by gross hypoxia.[12,13]

Diagnosis

The patients developing this condition will give a long previous history of chronic cough with or without the production of phlegm, and with frequent episodes of dyspnea usually associated with mild upper respiratory infections which will often precede the acute obstructive pulmonary crisis. The patient complains of severe respiratory distress. When cor pulmonale complicates the pulmonary crisis, there is frequently a decrease in the objective evidence of dyspnea. This should not be mistaken for improvement. Cyanosis is always quite marked, and the cough, if present, is weak and ineffectual. Because of hypercapnia the patient may complain of headache, and he will exhibit somnolence and mental confusion, gradually progressing to weakness, irritability, and finally unconsciousness. Until the terminal stages the arms and nose are warm, and the blood pressure may be elevated with a wide pulse pressure. Later the extremities become cool and the blood pressure drops. The chest is usually held in a deep inspiratory position with the auscultatory findings those of rhonchial rales and wheezes. Examination of the heart may be difficult during the acute crisis, however, right ventricular heave or gallop rhythm may be noted.

Examination of the abdomen may reveal a large, tender liver which may pulsate if tricuspid incompetence has developed. The ocular fundi show distended veins and often early papilledema. At times there is in-co-ordination of the limbs with involuntary jerking movements. The tendon reflexes are hypoactive.

Radiological investigation will often show right heart enlargement, especially if the right heart has already undergone dilatation. The pulmonary arteries and conus are prominent.

The electrocardiogram often presents tall, spiked P waves and right axis deviation. Right ventricular hypertrophy and strain patterns in the precordial leads may be detected by a larger R wave in V_1, with T wave inversion in V_1-V_3, and large S waves in V_5. Commonly seen are marked clockwise rotation, various degrees of right bundle branch block, and a late R wave in a VR (qR) pattern. Patients with chronic bronchitis alone may show some of these deviations, but development of heart failure usually intensifies the changes, especially the pattern of right ventricular strain. The T wave inversion in V_{1-3}, significant of right ventricular strain, may disappear with recovery from failure.[10,5]

If prompt treatment is not instituted, the patient will enter the terminal phase of respiratory insufficiency manifested by deepening coma and cyanosis with rising pulse rate, falling blood pressure and increased peripheral vasoconstriction.[7]

The major problem to overcome is the severe alveolar hypoventilation produced by mechanical plugging of the bronchi with mucus plugs and secretions which the fatigued and moribund patient is no longer able to remove. Such states of hypoventilation lead to marked alteration of blood gases with profound effect on the nervous and cardiovascular systems.

Often these patients have been receiving bronchodilators and nebulization to no avail. This should not be considered as drug resistance to these customary medications; rather it should be recognized that these forms of medication are no longer adequate for the job expected of them.

The Management of Acute Pulmonary Obstructive Crisis

The first goal in treatment is to establish an adequate airway. If the patient is supine, the shoulders should be slightly elevated with the head hyperextended and the mandible displaced slightly forward. This will offer the optimum airway.[14] Flexion of the head will cause complete airway obstruction in almost all patients. It is important to remember that no form of assisted ventilation will be effective unless adequate control of the airway can be obtained.

The Ambu Ruben Resuscitator with a well-fitted face mask has been found to be effective for initial resuscitation. Inflation pressure, often quite high at first, accomplishes some decrease in anoxia and lessens the possibility of vagal cardiac arrest during subsequent procedures.

After a short period of ventilation, a cuffed endotracheal tube is passed into the larynx under direct laryngoscopic view. Since these patients are nearly moribund at the onset, intubation is accomplished with ease. With positive pressure ventilation, it is important that the tracheal cuff supplies an airtight seal. Gastric dilation, which is frequently present, may be quickly decompressed by passing a large-bore gastric gavage tube. A small catheter may be passed through the endotracheal tube to aspirate mucus and tenacious plugs. The direct instillation of 15-20 cc. of saline, or a solution of trypsin and saline, will aid in loosening dry, tenacious mucus.[15] A program of tracheal suction for ½ minute followed by ventilation for 3 minutes has been recommended.[16]

Maintained mechanical assistance for respiration is often needed to correct the severe hypoxia and hypercapnia. This may be accomplished in a number of ways. One adequate means of resuscitation is by external positive-negative pressure, exemplified by the Drinker respirator, which is excellent for providing artificial respiration over a long period of time.[17,18] Unfortunately this is often unavailable for emergency work. Other mechanical respirators more commonly available are the self-cycling Bennett and the Bird. These intermittent positive pressure respirators (IPPB) may be attached directly to the endotracheal tube or to a face mask if intubation has not been necessary. They allow the patient to be given 100% oxygen, will maintain adequate rate and depth of respiration sufficient to avoid carbon dioxide narcosis, and will relieve the work of respiration.

In the past the tendency has been to administer a slow, continuous flow of oxygen to maintain some hypoxic drive to the respiratory center. This therapy has been shown to be ineffective in the seriously ill patient.[5] The use of 5% carbon dioxide should also be condemned, since this will only increase the acidosis.

After overcoming the initial high ventilatory pressure, the automatic cycling IPPB device may be adjusted to a pressure which increases gradually to around 25 cm. of water pressure. Inspiratory time should not exceed expiratory time because of the inhibitory effects of increased intrathoracic pressure on venous return to the heart.[19]

One of the most severe and life-threatening complications of positive pressure breathing is hypotension. Maloney[20] has shown that intermittent positive-pressure breathing caused a precipitous fall in systemic blood pressure and severe depression of the cardiac output in individuals with pre-existing respiratory and circulatory inadequacy. This is quite different from the response in normals where the crisis is met by vasoconstriction, mobilization of pooled blood and elevation of peripheral venous pressure. The patient with cardiopulmonary insufficiency does not seem to have available the necessary compensatory circulatory mechanism.[21,19] Metaraminol can counteract the deleterious effects of positive-pressure breathing. This is accomplished by increasing venous tone, arterial pressure and myocardial contractibility.[22] Tetany due to mechanical ventilation has not been observed in these patients.[19]

When compressed O_2 is used through an endotracheal tube there is always the problem of excessive drying of the mucosa. This is best corrected by heated, nebulized saline delivered by the mistogen unit into the main stream of the respirator. The intermittent side-stream nebulization of 0.5 cc. of 1:200 isopropylarterenol with 2 cc. of alevaire may frequently prove valuable in reducing bronchial spasms and in loosening thick, tenacious secretions.[23] The length of time assisted respiration is needed will have to be determined by the individual case. Lovejoy, et al.[24] have shown that, even after correction of the respiratory acidosis, several days were required for the respiratory center to become adjusted to a relatively normal CO_2 tension. They have also advocated frequent determinations of arterial blood pCO_2 and pH to evaluate adequacy of the treatment and the success or failure of mechanical ventilation.

Endotracheal tubes have been left in place for up to 72 hours; however, this is hazardous, since secretions can accumulate at their tips, which may cause airway obstruction. After 24 hours one should carefully assess the situation, and tracheotomy should be done if assisted respirations are still needed or maintenance of a clear airway is mandatory.[25,26] One cannot overstress the advantage of an orderly, elective tracheotomy, remembering that tracheotomies carry with them a certain risk.[27] Permanent tracheal fenestration may be of benefit to those patients who continue to need periodic bronchial suction.[28]

Case Report

P. Y. a 73-year-old white male was admitted to our hospital on September 17, 1961, in a moribund state. He had a long history of asthma and emphysema. One week prior to admission he had developed a cold with increasing cough and sputum. On admission he was noted to be extremely cyanotic, in deep coma with feeble Cheyne-Stokes respirations. His temperature was 100.8° F., pulse 120 per minute, and blood pressure 160/80. The neck veins were distended, and the lungs revealed expiratory rhonchi with no vesicular breath sounds audible. The heart sounds were distant, but a diastolic gallop was heard. The liver was enlarged 5 cm. below the right costal margin and was pulsatile. There was clubing of the fingers and toes and 3 plus pitting edema of the legs. Reflexes were hypoactive. The chest X-ray showed inflammatory infiltrates in the left lower lung field, and the pulmonary arteries were prominent. The white blood count was 22,100 with a shift to the left. The hemoglobin was 12.7 Gm.%.

Resuscitation was begun, and a cuffed endotracheal tube was passed into the larynx. A large amount of green urulent material was immediately aspirated. He was placed on an automatic cycling Bird respirator with periodic suctioning. The blood pressure fell shortly after IPPB was instituted and required aramine and levophed for support for the next 12 hours. The patient's color returned immediately, and in 9 hours he was able to respond to commands. The next day a tracheotomy was performed in the operating room because of continued need for suctioning. The patient went on to make a good recovery from his acute obstructive pulmonary crisis, and two days after admission his pCO_2 was 51 mm. Hg with an arterial blood pH of 7.46. One month later the patient developed a sudden cardiac arrhythmia and died.

This patient presents an example of acute obstructive pulmonary crisis which was precipitated by an infection in an individual with long-standing pulmonary disease. Acute anoxic cor pulmonale was superimposed upon a chronic form of pulmonary heart disease. Although this case was extreme, and the patient was later to succumb to his cardiac disease, it nevertheless demonstrates the reversibility of this premoribund state by mechanical resuscitation and oxygen therapy. If the underlying pulmonary and cardiac disease has not progressed to a point of irreversible failure, a good prognosis can be expected of this otherwise hopeless situation.

Summary

The pathophysiology of the severe alterations which take place during an obstructive pulmonary crisis are reviewed. The management of the acute phase has been outlined in a step-like fashion. Explanation of treatment and treatment goals are stressed, and special attention is focused on possible side effects. Emphasis on the medical management is made throughout, even though frequently this is individualized according to the demands of the case.

Acknowledgements

I wish to express my appreciation to Dr. Frank M. MacDonald and Dr. Alfred Eichenholz for many helpful suggestions in the preparation of this paper.

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*References 13-28 can be obtained from the author. They will be included in the reprints.

REITER'S SYNDROME

(Urethro-oculosynovial syndrome)

This syndrome is characterized by arthritic manifestation, non-specific urethritis, and conjunctivitis occurring most frequently in young males.

Polyarthritis usually dominates the clinical picture. It is acute with pain, tenderness, swelling, heat, and effusion, involving most often the weight-bearing joints. Urethritis and conjunctivitis often precede the arthritis. The urethritis is unassociated with sexual exposure. The disease subsides spontaneously within four weeks. The conjunctivitis although purulent is usually sterile, and no specific organism has been incriminated though a viral etiology is suspected. There may be cutaneous lesions resembling erythema multiforme, and there may be peripheral lymphadenopathy.

The disease is associated with anorexia, nausea, vomiting, cough, and pleuritis. There may be fever, leukocytosis, increased sedimentation rate, albuminuria, and slight anemia.

The treatment consists in the administration of ACTH and cortisone.

The only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd rather not.

Mark Twain

TABLE I

PREOPERATIVE DIAGNOSIS

Appendicitis	11
Perforated Stomach or Duodenum	6
Incarcerated or Strangulated Hernia	4
Small Bowel Obstruction	3
Trauma With Possible Visceral Injury	3
Ascites	1
Cholecystitis	1
Ileocecal Intussusception	1
Meckel's Diverticulum	1
Mesenteric Thrombosis	1
Pancreatitis	1
Perforated Sigmoid Diverticulum	1
Walled-off Perityphlitic Infiltration	1
Not Stated	4
Total Cases	39

Acute

Acute chylous ascites has never been correctly diagnosed preoperatively, as noted in the literature. The mortality, however, is low and most patients respond to surgery promptly. This interesting paper will sharpen the wits of all clinicians and improve our diagnostic acumen.

THE FINDING of free chyle in the peritoneum associated with acute abdominal disease is both rare and startling. Free chyle in the peritoneum can be produced by a variety of conditions and may occur either as an acute or as a chronic manifestation. This report will be limited to the acute form of chylous ascites.

All but one of the 38 cases collected from a review of the world literature fit Hoffman's criterion that at laparotomy for an acute abdominal emergency, free chyle should be found.[1] In the exception, free chyle was found on paracentesis in a patient in whom the cisterna chyli had been injured while performing a portocaval shunt.[2]

In order to clarify the clinical manifestations, diagnosis and management, a detailed evaluation was made of the 38 collected cases and a personal experience is recorded in the following case report.

Case Report

A 61-year-old white male was admitted with a history of a sudden onset of severe crampy abdominal pain of six hours duration. There was constant pain of lesser degree in between the cramps. Initially the pain was in the mid-abdomen, but two hours later it localized in

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*Attending Surgeon, Swedish Hospital. (Minneapolis)

TABLE II

ETIOLOGY

		Cases
Idiopathic		14
Small Bowel Obstruction		8
a. Adhesive band	5	
b. Strangulated Inguinal Hernia	3	
Trauma		6
Thoracic Duct Obstruction		6
a. Enlarged heart	3	
b. Arterio venous aneurysm of left subclavian vessels	1	
c. Tuberculous glands	2	
Mesenteric Adenitis		3
Ruptured Chylous Mesenteric Cyst		2
		39

Chylous Ascites

ELMER J. MARTINSON, M.D.*
Wayzata, Minn.

the left lower quadrant. There was no nausea or vomiting and he had had a normal bowel movement earlier that day. He ate three large pork chops, a large amount of butter and bread at noon. He continued working hard in the afternoon, lifting heavy shocks of corn.

There had been a right inguinal hernia for many years which had not caused any trouble and was freely reducible. Operations included an appendectomy and hemorrhoidectomy.

Physical examination revealed a slender white male in severe pain. There was a well-healed right lower quadrant scar. The lower abdomen was moderately distended and there was tenderness, spasm and rebound tenderness. Peristaltic activity was moderately increased. Bilateral inguinal hernias were freely reducible. There was also a small non-tender epigastric hernia.

Flat plate and upright x-rays of the abdomen were normal. Hemoglobin was 13.2 grams per cent. White blood cell count 10,700 per cubic millimeter with 37% lymphocytes and 63% neutrophils. The urine was normal. The serum amylase was normal. The pre-operative diagnosis was perforated sigmoid diverticulum or small bowel obstruction.

Exploratory laparotomy revealed several hundred milliliters of milky white chyle free in the peritoneal cavity. The lacteals and collecting lymphatics of the small bowel were markedly enlarged. The proximal two-thirds of the small bowel mesentery was nearly three centimeters thick and so engorged with chyle that it was white. Several enlarged lymph nodes were present. The proximal small bowel was actually edematous with chyle. The appendix had been removed.

It was impossible to find any rent in the cisterna chyli or lymphatics. The free chyle was removed. A lymph node was removed and the abdomen closed with two drains. Microscopic section of the lymph node showed chronic lymphadenitis. The chyle was identified by its content of fat and cholesterol.

The patient was maintained on parenteral feedings for several days and then given a low fat diet. Since there was no drainage, the drains were removed on the fourth day. He was discharged on the seventh day in good condition.

Subsequent x-rays of the esophagus revealed an enlarged left atrium; otherwise, the esophagus and stomach were normal.

Five weeks later a bilateral herniorrhaphy and epigastric herniorrhaphy were done. There was no evidence of chylous ascites. Other than mild ailments, he has remained in good health.

It would appear probable that overindulgence in fatty food engorged the cisterna chyli and small bowel. The enlarged left atrium may have caused partial blockage of the thoracic duct. Exertion from heavy lifting could have added strain and a weak area in the cisterna chyli ruptured; chyle extravasated into the mesentery and escaped free into the peritoneal cavity.

Age & Sex

Two-thirds of the cases recorded in the literature were under forty years of age and nearly two-thirds were male. Their ages ranged from ten days to 72 years. The sudden onset occurred soon after eating a heavy fatty meal in nearly half of the cases.

Symptoms

Symptoms in 14 cases for, which no etiology could be found at surgery, came on suddenly with generalized abdominal pain. The pain was frequently crampy in character with residual constant pain in between, and was usually localized in the lower abdomen. Nausea was present frequently but vomiting was rarely encountered. The usual interval from onset to operation varied from six to forty-eight hours.

The temperature was seldom over 100° F. The white blood cell count varied from 8,000 to 20,000 per cubic millimeter, but it usually was under 14,000. In nearly all cases there was tenderness with muscle spasm and frequently rigidity and rebound tenderness.

Vomiting and abdominal distention were more frequent in the presence of small bowel obstruction; otherwise, the clinical picture was similar regardless of the etiology.

Diagnosis

The pre-operative diagnosis was most frequently appendicitis with perforated viscus being next in order. The diagnosis has not been made pre-operatively in any of the recorded cases. (Table I)

Etiology

Exploration revealed free chyle in the peritoneal cavity in all of the cases and usually showed extravasated chyle in the leaves of the mesentery with dilated lacteals and collecting vessels. The etiology was not found in fourteen. Small bowel obstruction was present in eight. Three of these were associated with strangulated hernia. Trauma and thoracic duct obstruction each accounted for six cases. Mesenteric adenitis caused three and ruptured chylous mesenteric cysts two. (Table II)

Treatment

Exploratory laparotomy was done in all except one case where the diagnosis was made by paracentesis.[2] The cisterna chyli had been injured while doing a portacaval shunt. Following aspiration of 800 milliliters of chyle, the patient gradually improved and was well at the end of six weeks. In only three cases was the actual rent in the base of the mesentery found and sutured. Appendectomy was performed in fourteen cases without any complications. Small bowel obstruction was relieved by division of adhesive bands in four and untwisting a volvulus in one. Four inguinal hernias were repaired, three of which were strangulated. One mesenteric chylous cyst was excised and another marsupialized. Mesenteric lymph nodes were excised in two.

Drainage was used in 21 cases. The drainage persisted as long as 16 days but generally there was very little. Hoffman concluded that it did not matter whether or not a drain was used except "when trauma had produced a rent in the cisterna chyli."[1]

Recovery was usually prompt and complete. There has been no known recurrence of chylous ascites in the 39 selected acute cases in contrast

TABLE III

OPERATIVE PROCEDURES AS RELATED TO ETIOLOGY

	Cases
A. Idiopathic	
1. Laparotomy with drainage	8
2. Appendectomy with drainage	3
3. Appendectomy without drainage	3
B. Small Bowel Obstruction	
1. Division of adhesive band (appendectomy in 2)	4
2. Inguinal herniorrhaphy	3
3. Untwisted volvulus	1
C. Trauma	
1. Sutured defect in mesentery (drainage in 1)	2
2. Laparotomy with drainage	1
3. Appendectomy (with drainage in 1)	2
4. Paracentesis	1
D. Thoracic Duct Obstruction	
1. Appendectomy with drainage	1
2. Laparotomy with drainage	5
E. Mesenteric Adenitis	
1. Laparotomy and right inguinal herniorrhaphy	1
2. Excision of lymph node and appendectomy	1
3. Biopsy of necrotic lymph node—suture of leaking lumbar lymph channel with drainage	1
F. Ruptured Chylous Mesenteric Cyst	
1. Appendectomy with drainage and one month later excision of cyst	1
2. Marsupialization of cyst and appendectomy with drainage	1
	39

(Appendectomy in 14 cases)
(Free chyle removed in all and drainage used in 21 cases)

to the persistence of ascites in the chronic group. Nix observed a cure rate of only 36% in a collected series of 146 chronic cases.[3]

There were two deaths. One patient came in four days after onset with severe ileus and distention and expired 15 minutes after exploration. The other died a month after exploration from miliary tuberculosis.

Discussion

What causes the acute symptoms and why does chyle apparently react differently in the acute and chronic extravasations?

Chyle is similar to lymph with the addition of fat droplets which stain with Sudan III. The protein content is one half that of serum or about 3 grams per cent. The milky fluid separates into layers on standing with a creamy fat layer rising to the top. Occasional lymphocytes and polymorphonuclear cells are noted and the fluid is alkaline in reaction and sterile.

Chyle is formed by admixture of lymph and fat droplets gathered from the submucosal lacteals in the intestine. This is transported via the collecting vessels into the intestinal trunk which, along with the two lumbar trunks, form the cisterna chyli. This in turn extends into the posterior mediastinum through the aortic hiatus. The thoracic duct then crosses from right to left at the level of the aortic arch and terminates in the left subclavian vein near its junction with the internal jugular vein. Near its termination is a large valve.

Crandall estimated flow in the thoracic duct at 0.93 milliliters per minute.[4] Following ingestion of food this may increase three fold to 200 milliliters per hour (Lampson).[5]

Lee produced extravasation of chyle in the region of the cisterna chyli and later into the leaves of the mesentery, and also retroperitoneally by ligation of the thoracic duct.[6] At the end of 24 hours only a small amount of ascites remained. Most of the extravasation was gone in 72 hours and little if any remained longer than 144 hours. Blalock and McGregor both ligated the thoracic duct without any untoward effect.[7-8] If the collateral vessels are inadequate extravasation will ensue. When the collaterals enlarge and the bypass is adequate the ascites disappears.

Hoffman postulated that free chyle acts as a noxious substance similar to free blood, but could not explain why pain disappeared or was not present in the chronic cases.[1]

It would appear likely that the flow of chyle being greatly increased after a heavy fatty meal may cause rupture of a weak area especially if obstruction of the duct is present. The pain may be caused then by overdistention of the lymphatic system and chyle under pressure in the retroperitoneal space. This is analogous to the severe acute pain in fulminating thrombophlebitis, in which there is a rapid increase in size due to obstruction of the venous and lymphatic systems.

In Milroy's disease an even larger accumulation of lymph may be present without pain.

Summary

A personal case of acute chylous ascites is presented along with observations from 38 cases collected from the world literature. Sudden overdistention of the lymphatic system, especially in the presence of obstruction of the thoracic duct, may account for the severe pain and findings.

Exploratory laparotomy with removal of chyle and correction of etiological factors is advised. Drainage is probably not necessary except where there is a definite rent in the cisterna chyli. Mortality is low and recovery is usually complete.

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WHAT'S YOUR DIAGNOSIS?

Female, age 40, entered the hospital complaining of acute pain in the abdomen, *shortness of breath*, vomiting, and *recent diarrhea*. Anorexia and 35 lb. weight loss had been observed by the husband in the past six months.

The past history indicated that she had had a gastric resection and cholecystectomy ten years ago and a hysterectomy one year ago.

The physical examination revealed a weight of 101 pounds and height of five feet, three inches. *The liver edge was palpable five cms. below the costal margin, both right and left;* it was not tender. The skin was dry; there was a *mild icterus of the sclera but jaundice of the skin was not evident*. The blood pressure was 142/68. The physical examination was otherwise not contributory to the diagnosis.

The hemoglobin was 11.9 grams; hematocrit 36.5; white count 19,700; PMN's 89. *The CO_2 combining power was 6.8 meq/1;* thymal turbidity 11.1 units; zinc turbidity 13.2 units; alkaline phosphates 20; *blood sugar 200 mg.%.*

The urine showed 2+ albumin; 3-5 hyalin cast; and 35-40 granular cast per high power field. There was no sugar in the urine.

The serum bilirubin, 1 minute, was 2.14 mg.% with a total of 2.98 mg.%. The BSP was 26%; serum protein total 6.15; albumin 3.55; globulin 2.60.

The history revealed that the patient had been in the hospital the previous year for acute alcoholism. A history of alcoholic intake at this time could not be obtained.

What Is Your Diagnosis? See Page 717

A rolling stone gathers no moss, but it gains a certain polish.

Oliver Herford

Evidence is presented to support the concept of an acute etiology for some patients with inguinal hernia. Perhaps this knotty problem will never be solved, but the author presents reasonable pathophysiologic evidence supporting the concept of sudden and severe strain as the primary problem in given cases of acute inguinal hernia.

Strain as the Causative Factor of Acute Inguinal Hernia*

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IT HAS long been controversial whether a single, severe muscular effort can produce sufficient trauma to cause acute inguinal herniation. For the most part, surgeons, and particularly those dealing with Workmen's Compensation cases, have come to the conclusion that seldom does a single strain cause a hernia, and some[1] insist never.

They have generally promulgated that inguinal hernia is a congenital disease caused by the wear-and-tear effect of intra-abdominal pressures on congenitally inadequate tissue; these pressures eventually result in breaching these relatively weak abdominal barriers. It is held that no single muscle strain is the cause of either direct or indirect hernia.

An interesting analogy between the birth of a child and the protrusion of a hernia can be made. One would not attribute the passage of a fetus through the birth canal to the final bearing-down pain. Rather, its passage results from hours of such effort. Similarly a hernia progresses down the inguinal canal or through Hesselbach's area, as the result of a multitude of strains that gradually attenuate obstructing tissues. Ordinarily then one should not assert that a particular muscular strain, after which a hernia became apparent, was the causative factor. The alleged strain only helped to make evident a latent condition.[1]

Attitude of the Courts

Interestingly, this knowledgeable opinion is blandly ignored by judges, juries, and compensation boards. This being the case, it is folly to attempt to change the de facto situation; for the more cogent thoughts of the physician on the subject are likely to be disregarded, and he becomes a shuttlecock in the battle between patient and insurance carrier. To avoid this situation, the physician falls back on the time-honored factor of "aggravation." For rarely can he isolate the infrequent case that has a clearly causative incident; and knowing that most cases associated with a history of work strain will be adjudged legally entitled to compensation, the physician concludes that, in fairness, all workmen are entitled to this beneficent thinking.

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*Presented before the Minnesota Surgical Meeting, Minneapolis, Minnesota, November 15, 1961

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When dealing with patients who have developed an inguinal hernia, and who may wish to establish it's compensability, the causal factors may be quite tenuous. However, three patients were recently seen who gave histories that strongly suggested they had suffered a precipitate inguinal herniation. My curiosity was aroused by the similarity of their accidents.

Mechanics of Convulsive Effort

Briefly, each had been carrying a heavy load on his back. For example, one had been supporting a heavy garage door; another had been carrying a refrigerator. A foot that had been firmly fixed suddenly slipped; a momentary, convulsive, muscular effort was required to regain balance. Each immediately felt a severe pain in the groin, on the side where the foot had slipped. The three men came in for examination the day after their accident.

Because these stories were sufficiently striking and the implication at variance with the generally accepted cause-and-effect relationship, the literature was reviewed for similar accidents. Most writers subscribe to the theory that physical effort usually does not produce enough trauma to cause acute inguinal herniation. However, L. S. Fallis of Henry Ford Hospital was among the few who disagreed.[2] He noted that his patients, when closely questioned, frequently gave a history of having had a foot slip while engaged in heavy lifting. In contrast, Fallis stated that if the feet were firmly braced, severe strain would not initiate the train of events which result in a rupture.

Now position can greatly affect intra-abdominal pressure. For example, a person lifting a heavy weight while he is in an erect position has no significant rise of intra-abdominal pressure. When he holds statically the same weight over his head, these pressures fall to about those present in a resting state. But if he stoops and suddenly snatches up the weight, a great, though transient, pressure increase develops. Intra-abdominal pressures as high as 140 mm. Hg. have been measured during such a maneuver.[3] This pressure rise, it has been found, is proportional to both the suddenness and the magnitude of the effort.

A review of groin anatomy may explain why a slip of the foot while a workman is straining, especially in a stooped position, will cause such unusual stress to the groin that a sudden rupture may result.

The internal and external rings are not normally in apposition. Between them lies a passageway bounded posteriorly by the transversalis fascia and anteriorly by the aponeurosis of the external oblique. Abdominal viscera ordinarily cannot enter this canal even though it contains a congenital sac — and probably never if there is no congenital sac.

Still, potentially there is a tendency, effected by intra-abdominal pressure, for the viscera to pass through the ring and down the canal. However, this potential breaching of the internal ring is prevented by the same abdominal force acting to coapt the walls of the passageway, i. e., the transversalis is compressed against the aponeurosis.[4] In short, the hydrodynamic forces act not only to open the passageway, but also at the same time to close it.

The arching fibers of the internal oblique and the transversus muscles function as a shutter to further protect the internal ring. Since intra-abdominal pressure can increase only when these oblique muscles contract, the shutter automatically covers the ring before intra-abdominal pressure rises significantly.

Hesselbach's area is bolstered by two barriers: the transversalis and the aponeurosis. When the oblique abdominal muscles contract and thereby raise abdominal pressures, the aponeurosis automatically tightens and firmly supports the transversalis fascia.

The strength of the inguinal canal, then, is dependent, in part, on perfect co-ordination of the neighboring muscles.[4] If they become inco-ordinate because of a sudden loss of balance, the protective mechanism for both the internal ring and Hesselbach's area is weakened.

When a foot slips, the thigh flexes; the aponeurosis momentarily becomes slack; its effectiveness then as a buttress for the transversalis is weakened, and the internal ring is rendered vulnerable by the lessened coaptation of the canal walls.

Conclusions

Tieing all this together, in support of the thesis that a single strain can, though infrequently, cause inguinal herniation, I would reconstruct the mechanism of injury to my patients as follows: while bending forward with a heavy burden on their backs, in each case, the right foot suddenly slipped; the leg abducted and the thigh flexed; their footage was abruptly regained, but during this brief, violent spasm of muscular effort an unusually large rise of abdominal pressure occurred because of the body position, the suddenness, and the magnitude of the effort. As the pressure rise surged against the groin, in one patient the transversalis gave way, being unsupported by the momentarily slack aponeurosis. In the other two men, both younger, a presumption is made of a congenital sac. In these two, one can postulate that the pressure surge breached the internal ring because of an in-co-ordinated action between aponeurosis and transversalis (making the canal vulnerable) and a dysrhythmic response between the shutter fibers and the major muscle body of the internal oblique and transversus muscles, with consequent relaxation of the shutter, thereby allowing a breaching of the portal to the canal.

One cannot state that these three workmen would not ultimately have developed hernias as the result of a congenital predisposition. But I suggest that in each of these cases herniation did occur precipitately as the result of a single, violent stress.

In any event, the speculation involved in trying to explain the precipitous appearance of a hernia in three patients having identical histories of stress has proved interesting.

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Greatness

It is force of principal which measures moral greatness—that highest of human endowments, that brightest manifestation of the Divinity. The greatest man is he who chooses the right with invincible resolution, who resists the sorest temptations from within and without, who bears the heaviest burdens cheerfully, who is calmest in storms, and most fearless under menace and frowns, whose reliance on truth, on virtue, is most unfaltering.

William Ellery Channing
from Sunrise

Half the world is composed of people who have something to say and can't, and the other half who have nothing to say and keep on saying it.

Robert Frost

A Review of Ventral Hernia in Gynecologic Patients*

The authors tackle a common and difficult problem. Incisional or ventral hernias in 103 patients with previous surgery have been treated with herniorraphy and the results analyzed. In only 6 patients was a prosthesis necessary and the authors indicate a preference for autogenous fascia lata as a graft material.

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ANY SURGEON doing laparotomies, regardless of the type of procedure, the kind of incision, or the suture material he uses, eventually finds that one or more of his patients has developed an incisional hernia. The more complicated the operation the more likely it is that such a hernia will occur, but even routine gynecologic operations are no exception. Postoperative dehiscence of the wound is part of a similar process and should be discussed in any review of ventral hernia. Hartzell and Winfield[1] reported on 1458 patients with dehiscences, 17.4 per cent of which followed gynecologic operations. Although such "accidents" represent only a fraction of 1 per cent of the total number of gynecologic or obstetric laparotomies, they still constitute a significant number.

Etiologic Factors

We believe that any factor that increases intra-abdominal pressure or weakens or delays wound healing may result in dehiscence or in a subsequent ventral hernia. If an incision has been closed poorly or if the sutures begin to give way, the intra-abdominal contents can be forced through the peritoneum, then through the more superficial layers of the abdominal wall, and finally through the subcutaneous tissues and skin.

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If all layers separate, a complete dehiscence occurs; but if some remain intact, then a postoperative hernia results.

Numerous articles have been written on the predisposing or underlying causes for wound disruption or hernia formation. Frequently cited are such conditions as anemia, protein deficiency, bad nutritional state, vitamin deficiency, chronic illness, old age, protracted malignant disease, or multiple abdominal incisions. Acute conditions, such as upper respiratory infections with a cough, or vomiting or abdominal distension, are more obvious, but even urinary retention has been implicated. Insecure hemostasis with hematoma formation or wound infection is a rather common finding, as is the presence of drains or enteric stoma through the wound. More uncommon is the prolonged use of steroids, allergy to catgut, faulty anesthesia, or postoperative injury. Vertical versus transverse incisions always provoke arguments, with proponents for each, and the same is true for the type of suture material utilized. But underlying most ventral hernias in gynecologic patients is the old nemesis, obesity. Fat per se probably causes as much trouble as all the other factors combined in the case of the well-fed, well-groomed, slightly plump American woman.

In an effort to go further into the problem, we reviewed the dehiscences and hernias seen in women during the 5-year period 1956 through 1960. Eight dehiscences followed gynecologic procedures, an incidence of roughly 1 in 500 laparotomies. Also, 104 postoperative ventral hernias were treated in these 5 years, 103 of them surgically (106 repairs). Forty-three repairs were incidental to other procedures, and sixty-three were done as the only procedure. As the majority of these patients had had their primary operation elsewhere and a number had had attempted repairs, so that we could make no estimate of the incidence of hernia following laparotomy.

Dehiscences

The eight dehiscences were of particular interest because of the necessity of evaluating the patients' need for immediate treatment. In five patients the dehiscence was complete, and in three it was incomplete. All eight had extensive operative procedures or stormy postoperative courses; however, all but one recovered. This one patient had metastatic malignancy, cachexia, partial obstruction and postoperative shock requiring treatment with levarterenol (Levophed) for 2 days. She partially dehisced on the tenth postoperative day, and 5 days later the wound was strengthened with six Nylon retention sutures. Subsequently a fistula of the bowel developed, and some weeks later she died. Mortality figures in the literature vary, but most reports give mortality rates of 10 to 25 per cent for dehiscence.

In two cases, definite hematomas were present in the incisions and were drained, while in four additional cases a serosanguinous discharge was noted 1 to 8 days before clinical dehiscence occurred. This type of drainage as opposed to drainage of obviously old blood is almost pathognomonic of separation of tissues into the abdominal cavity, though it gives no hint as to the extent of the separation, which may be only pinpoint in size. But this type of drainage occurred in 50 per cent of our cases, and Wolff[2] reported it in two-thirds of his cases of dehiscence.

Certainly distention, vomiting and ileus played a part in at least four patients; three patients were distinctly anemic; two had marked hypoproteinemia and two had preoperative or postoperative abscesses. Surprisingly enough, we could not say that obesity was a factor in disruption of the wounds of these eight patients.

Dehiscence occurred at about 10 to 14 days postoperatively; but in six patients hematomas or serosanguinous drainage had given some warning several days previously.

Treatment of Dehiscence

Treatment should of course be prophylactic and anticipatory as well as active. It is axiomatic to get the patient in the best possible condition before operation if the condition is not an emergency one. After operation, the patient must be treated symptomatically if ileus, excessive vomiting or distention occurs. The use of the Miller-Abbott tube may be lifesaving. The onset of a serous discharge or perhaps a severe tearing pain in the incision is suggestive, and the incision should be treated with overlapping strips of adhesive tape or with large butterfly tapes from flank to flank. Any possible underlying etiologic factor such as anemia or cough should be most actively treated with blood, antipertussants, and the like.

If no loops of bowel are seen, then the wound should be cleaned and palpated with sterile gloves or forceps. Even if a loop of bowel is present at the peritoneal or muscular level, one can support the incision with tape, use antibiotics and give general supportive therapy, especially if the patient is in poor condition, as so many patients are. After 24 hours or longer, secondary closure should be considered.

If loops of intestine are out on the abdomen or at skin level, one must reoperate as soon as it is feasible, scrubbing the abdominal wall with soap and water, removing all fibrin and blood, and then carefully cleaning and replacing the bowel under strict aseptic conditions. It is useless to attempt a separate-layer anatomic closure in the inflammatory tissues of these postoperative wounds; therefore, through-and-through sutures should be used, taking in the full thickness of the abdominal wall. The type of suture matters little, but the sutures should be tied well back from the incision over buttons or rubber tubing. Then the skin can be closed with the usual silk sutures. Recurrent dehiscences are most infrequent, although a ventral hernia often results from this complication.

Hernia

In our 103 patients with 106 repairs of ventral hernia the problems were not primarily emergency ones and could therefore be dealt with more leisurely and with more consideration. Although 77 of these patients had their initial operation elsewhere, we did know what had been done. The series included fifty-three hysterectomies, seven cesarean sections, five myomectomies, three tubal ligations and 12 suspensions. The last three operations are considered to carry a very low risk and minimal morbidity, while the relaxation of the abdomen after cesarean section should militate against hernia formation.

Although we did attempt to assign causes for the hernias in 25 patients, including two that we had operated on, we could find no satisfactory cause. In many cases there was more than one cause. Included among the miscellaneous causes were "shock" therapy, syphilis, myxedema, subsequent pregnancy, falling out of bed, foreign body, and the like. Obesity was the most common finding; 61 patients were noted to be overweight, fat or obese by the examining physician, 27 of these weighing more than 180 pounds.

Treatment of Hernia

Treatment of the hernia depended basically on whether the hernia was the primary cause for the operation. When it was an incidental finding, the abdominal wall was closed in layers as in any routine laparotomy. An anatomic repair was done with catgut, cotton, silk, or steel wire, depending on the individual surgeon's preference. These repairs of healthy tissues, without undue tension and done carefully, should have been eminently satisfactory; yet two hernias recurred in a group of 56 patients. In two additional patients a hernia was repaired from within the abdomen in the course of laparotomy, and each repair held satisfactorily. Six hernias were so large that the defects could not be bridged with ordinary means, and use of a prosthesis was necessary. None of these have recurred to date; nor has the tantalum mesh, Nylon or Ivalon material had to be removed. The abdominal wall was overlapped 1 to 5 cm. in 42 patients with combinations of suture material. These repairs were strong and were used on many of the large hernias.

The hernial sac must be isolated and cleaned and the thin devitalized tissues excised as far as possible; yet sufficient edges must be left for overlapping in the closure. This procedure can be complicated at times by adherent viscera that require freeing by sharp dissection and perhaps even resection of portions of bowel that have been so traumatized that it is not safe to leave them in situ. A rare complication encountered recently resulted in increased problems with the closure. A 42-year-old overweight patient had had a hernia for 4 years following hysterectomy. It was painful and tender and, in addition, a palpable right ovarian cyst was present. While the urinary tract was being investigated for chronic urinary complaints, a curved rim of calcified material was seen, and the cyst was considered to be an unusual form of dermoid. Exploration of this tumor together with repair of the large hernia (10 by 12 cm. in diameter) was advised. Ileum was so adherent in the hernial sac that segmental resection and primary end-to-end anastomosis were necessary first. The patient then proved to have a large simple cyst of the right ovary. But the most interesting finding was that the calcified material was a bony ring about the superior and right sides of the hernia. When this had been excised, an overlapping closure with fascia was done uneventfully.

These repairs consist basically of closing the peritoneum with catgut suture, pulling one abdominal wall beneath the other for 1, 3 or 5 cm. The overlapped wall is now held with further sutures of catgut, cotton, silk, or strips of fascia lata. The fascia can be obtained from either thigh and of course is always available. Repair with fascia lata does require one special instrument and several needles but leaves no foreign material in the wound and is surprisingly strong in the face of infection. Three to seven strips of fascia 7 to 8 inches long should be used for the repair. Not only should strips be used lengthwise, but some should be worked across the incision from strong tissues on one side to those on the other. The fascia should be buried as much as possible to allow maximal contact with structures of the abdominal wall. It should be under some tension, and wherever strips cross they should be threaded through one another to give added anchorage and increased strength. In 42 patients with these overlapping closures there were four recurrences of hernia.

Prognosis

The mortality rate from such hernial repair in the absence of bowel resection should be less than 1 per cent. However, if the hernia is incarcerated, the risk rises, and when strangulated viscera are present the risk approximates 20 per cent. Ventral hernias have wide orifices and do not become strangulated often, but since they do carry some risk of strangulation they should be repaired after proper weight loss. There were five deaths among our 103 patients, for a mortality rate of 4.9 per cent. However, in two patients the operations were complicated, and the hernias were small and only incidental and had nothing to do with the patients' deaths. In two patients the hernias were large but were associated with extensive operations for metastatic malignancy; both patients succumbed 5 weeks postoperatively. The fifth patient had an obstructing lesion in a very large hernia that necessitated jejunostomy as well as repair of the hernia; she died 1 day postoperatively, representing the only death directly attributable to repair of the hernia.

Summary

Wound dehiscence and ventral hernia in gynecologic patients are related to various underlying factors. The patient with a dehiscence must be treated as an entity by supporting the entire organism and not by just blithely sweeping the poor girl back to the operating room for further stitching. Of 106 repairs of ventral hernia, 43 were incidental to other operative procedures, with recurrence of two hernias repaired under these optimal circumstances. The other 63 repairs were done as the only procedure, necessitated by the condition of the hernia per se; in six of these a prosthesis was used without a recurrence of the hernia, but in 42, in which repair was of the overlapping type, there were four recurrences. Emphasis is placed on use of the patient's own fascia lata as the suture material of choice in the repair of large complicated hernias.

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HERE'S THE ANSWER TO WHAT'S YOUR DIAGNOSIS FROM PAGE 710

Isopropyl alcohol poisoning. Because the patient had been denied the use of liquor, she had resorted to using rubbing alcohol. The diagnosis was suspected on the finding of hypercapnia, the marked acidosis, the elevated blood sugar, and the acute diarrhea. The diagnosis of cirrhosis of the liver was also established on the finding of an enlarged liver, the elevated BSP, and the abnormal serum bilirubin determination.

Current Concepts Regarding Staphylococcal Disease*

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The staphylococcus aureus remains a prime problem. Continuing efforts help us control serious infections but, the danger of severe staphylococcus sepsis is ever present. This thoughtful article is important for every clinician.

STAPHYLOCOCCUS AUREUS organisms are ubiquitous in man's environment and may be considered part of the normal bacterial flora of skin and upper respiratory tracts. It would be impractical, therefore, to attempt eradication of the organism as a method for preventing staphylococcal disease. When a staphylococcal lesion occurs, it is usually because the complex balance between bacterial virulence, host-resistance and environmental factors temporarily, at least, favors the bacteria. Host-factors are highly significant in resistance to staphylococcal disease and it is the purpose of this discussion to correlate our present knowledge concerning host and bacterial factors with practical methods for prevention and treatment of staphylococcal disease.

Host Factors

Man enjoys a highly significant "natural resistance" to staphylococci and relatively severe alterations of metabolism or circulation are re-

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†This material presented in part at the continuation course for Pediatricians, Continuation Center, University of Minnesota, October 3, 1961.

quired to result in increased susceptibility to staphylococcal disease. These include diseases such as diabetes and cancer or treatment efforts with steroids or radiation. Although the exact biochemical reason for the decrease in resistance in these clinical situations is largely speculation, it is interesting that leukocytes from patients with diabetes produce less lactic acid than leukocytes from normal patients and their antibacterial activity is decreased[1,2]. The presence of foreign bodies (intravenous catheters, sutures, urinary catheters, or neurosurgical devices) has also been correlated with increased susceptibility to staphylococcal lesions. Elek has shown experimentally that the presence of a silk suture in the subcutaneous tissue of human volunteers potentiates the staphylococcus as much as 10,000-fold. He found that, although over one million organisms per ml. were necessary to establish a pustular lesion in normal subcutaneous tissue, as few as 100 organisms caused a severe purulent lesion in the presence o fa sterile silk suture[3].

Enzymes

As least two of the enzymes produced by staphylococci are dependent on a factor in human serum for activity. One of these enzymes is coagulase which produces a clot by activating a coagulase-reacting factor in plasma which in turn converts fibrinogen to fibrin[4]. Another factor is staphylokinase which activates plasminogen to plasmin, (an active fibrinolytic agent) [5]. Both the serum coagulase-reacting factor and plasminogen have been shown to be low in human infants and it seems possible that these or similar differences in enzyme function may account for the increased incidence of severe disseminated staphylococcal disease such as pneumonia and osteomyelitis in younger children.

Vaccines and Toxins

The role of humoral factors and specific immunity to staphylococcal disease is uncertain despite many years of experience with bacterial vaccines and toxins[6]. Immunization of individuals with tetanus and diphtheria toxoid, for example, produces excellent immunity to disease from these organisms. There has been little correlation, however, between resistance to staphylococcal lesions and immunization with either staphylococcal vaccine or toxoid. The diversity of toxins and enzymes produced by staphylococcal organisms and lack of knowledge concerning which of these factors may be important in the pathogenesis of staphylococcal lesions may account for the lack of correlation between antibody titers and immunity.

Antibodies

Recently, antibodies to several different staphylococcal products have been identified and described. These include staphylococcal hyaluronidase[7], leukocidin[8], capsular polysaccharide[9], and a hemagglutinin to a non-species-specific substance (Rantz antibody)[10]. Although there is little information concerning the possible role of antibody to these factors in protection against infection, these studies demonstrate the antigenic heterogeneity of staphylococcal organisms and their products.

Antibody to another staphylococcal product has been identified in our laboratory at the University of Minnesota. The Muller phenomenon is characterized by a satellite zone of multiple discrete areas of clearing at some distance from colonies of *Staphylococcus aureus* grown on blood agar plates containing fresh serum. The responsible bacterial factor has been identified as staphylokinase[11] which activates serum plasminogen to the active proteolytic enzyme plasmin. Antibody to the Muller factor (antistaphylokinase) has been found in low titer in the sera from most normal human adults[12]. The levels in the sera from newborn infants have been found similar to levels in normal adult populations indicating that these antibodies are placentally transferred to the newborn infant. These antibodies are not measurable in the serum from many infants 4 to 8 months of age when gamma globulin levels are physiologically low, but after 2 years of age most children again demonstrate antistaphylokinase antibodies in their sera, probably as a result of subclinical infection with staphylococci. Antibody titers in patients with severe staphylococcal disease such as osteomyelitis, muscle abscess, or enterocolitis have been found to be moderately increased. Paradoxically, however, occasional children with recurrent superficial lesions often completely lack a measurable antistaphylokinase titer [12]. These data are similar to those described by Fisher[13], who found that patients with chronic lesions often had lower titers of mouse-protecting antibodies than normal population.

Roodyn[14] made the interesting clinical observation that certain patients with superficial staphylococcal lesions continued to have recurrences until they experienced a severe carbuncle.

These observations are similar to our experimental observations that rabbits with small superficial lesions do not develop antibodies; however, after a severe infection, antibody to alpha-hemolysin can be detected, and these animals demonstrate immunity on subsequent challenge[15].

The availability of neutrophils and other phagocytic cells at the site of infection has also been shown to be extremely important in resistance to staphylococcal infection experimentally[16]. The increased susceptibility of patients with neutropenia due to aplastic anemia or leukemia to staphylococcal disease is well known clinically.

Bacterial Factors

There are a multitude of factors produced by *Staphylococcus aureus* which may be related to the ability of this organism to cause disease in a susceptible host. Factors which have been identified include leukocidin, dermonecrotoxin, lethal toxin, erythrogenic factor, enterotoxin and several hemolysins classified by the species of red cells lysed *in vitro*. Enzymes produced by the organism include coagulase, staphylokinase, hyaluronidase, phosphatase, protease, lipase, desoxyribonuclease, and penicillinase.

Coagulase

Most of these factors are produced by coagulase-positive organisms and are not produced by coagulase-negative strains; therefore, the production of coagulase, which is easily and rapidly measured in most routine diagnostic laboratories, serves as a reasonably satisfactory method for identifying potentially pathogenic strains. It is emphasized, however, that the role of staphylococcal enzyme coagulase in pathogenesis of staphylococcal lesions has not been clearly established. The nature of the staphylococcal lesion as a walled-off abscess with thrombosis of surrounding capillaries and fibrin formation may be the result of coagulase activity, but the formation of fibrin as a result of coagulase activity *in vivo* has not been demonstrated and local abscesses have been observed in animal species whose sera do not contain coagulase-reacting factors[4].

Antibiotic Resistance

Properties of staphylococci which may be related to the persistence of infection include the ability to survive within leukocytes after phagocytosis[17] and the ability to adapt to adverse surrounding nutritional conditions. Perhaps the most dramatic example of the adaptability of staphylococci is their ability to survive antibiotic therapy. The ability of strains to survive in successive subculture in increasing concentrations of antibiotic as demonstrated *in vitro* is believed to be through development of alternate pathways of metabolism. This type of resistance, however, is rare strains isolated from clinical material[18]. Penicillin resistance of staphylococcal strains isolated from clinical infections has been shown to be a result of the production of an extracellular enzyme, penicillinase, which inactivates penicillin[18]. Although occasional strains of staphylococci, which were isolated before the advent of penicillin therapy, have been reported to be penicillin resistant, this was not true at the University of Minnesota Hospitals. Spink reported that all strains isolated prior to 1945 were sensitive to 0.8 unit of penicillin or less. By 1949, one-half of strains of coagulase-positive staphylococci isolated were resistant to 50 units of penicillin and since 1954, over 70 per cent of strains isolated have shown this resistance to penicillin plus streptomycin and terramycin[19].

Identification of the enzyme penicillinase and isolation of the basic structure of penicillin (6-amino penicillanic acid) has enabled investigators to synthesize types of penicillin which are not affected by staphylococcal penicillinase. The chemical structure of one new penicillin is sodium 6-(2, 6 dimethoxy benzamido)-penicillinate monohydrate and is known commercially as "Staphcillin." This penicillin is active in a concentration 1 mcg. per ml. against penicillin-resistant strains of staphylococci, but is less effective than benzylpenicillin (Penicillin G) against penicillin-sensitive strains of staphylococci. Its effectiveness in clinical therapy has been established and it is a valuable addition to the therapeutic armamentarium.

Environmental Factors

The presence of staphylococci in the upper respiratory tract and/or skin of approximately one-half of all human adults and the colonization of most newborn infants in some nurseries by the tenth day of life, is evidence for the ubiquity of these organisms in man's environment and the ease with which they are disseminated. The colonization of newborns in the newborn nursery is probably due to other factors in addition to aerial contamination. Recently investigators, using careful controls, have found that babies were colonized by the same strain as attendants when there was direct contact between attendant and baby[20]. It has also been shown that the babies skin and umbilicus usually become colonized before organisms are detectable in the anterior nares so that in certain nurseries, at least, direct transmission of organisms may be a more significant factor than airborne spread[21].

Nasal Carriers

In addition to the problem of spread of organisms between persons, the question of auto-infection is often raised and indeed it has been shown that the incidence of postoperative wound infections is higher in patients who are nasal carriers[21]. Although there was significantly higher incidence of postoperative sepsis in the patients who were nasal carriers, in over one-half of these patients the phage type of the organisms recovered from the wound was different from the phage type of organisms recovered from the anterior nares of the patient, so that the relative significance of auto-infection is questionable. An alternative explanation would be that certain patients are colonized with staphylococci more easily than others and this is demonstrated by nasal carriage. Interestingly, in family outbreaks of staphylococcal disease, the phage type of the organisms isolated from lesions in several members of the family are the same but are different from the phage type of organisms isolated from the anterior nares of family members[14].

Staphylococcal organisms have also been isolated from stools as well as from various skin sites, but semi-quantitative studies have shown that the number of organisms isolated is usually from 100 to 10,000 times higher in the anterior nares than in other parts of the body[2]. The anterior nares of the human nose is probably the most important reservoir of the staphylococcus.

Prevention

Prevention of disease is the goal in all branches of medicine and in certain infectious diseases reasonably effective approaches are available. Two striking examples are the control of smallpox by vaccination and the control of diphtheria and tetanus by immunization. Prevention of the complications of streptococcal disease is also a possibility with adequate penicillin treatment of streptococcal infections. Means for prevention of staphylococcal disease have not been specific, however, and infection with this organism can be prevented only by the application of many non-specific measures. Maintenance of adequate host-resistance is probably the most important aspect of prevention. Since staphylococcal organisms of potential pathogenicity are ubiquitous in man's environment, a major disruption of host-resistance often antedates infection with this organism.

There are several situations in which patients are at high risks for staphylococcal infections and should be protected by isolation procedures. Newborn infants, patients with foreign bodies such as urethral or intravenous catheters and patients with burns are highly susceptible to infection. Patients with leukopenia are also at unusually high risk. The complete elimination of *Staphylococcus aureus* from the environment of these patients is not possible; however, measures should be employed which keep the *number* of organisms at a minimum and which decrease the possibility of spread of organisms. Staphylococci are viable in a dry as well as a moist environment so that transmission may be possible by multiple circuitous routes. Prevention of infection in patients at high risk is better accomplished by measures aimed to keep the number of organisms in the patient's environment at a minimum by isolation procedures and by frequent washing with bactericidal soap than by attempted antibiotic coverage.

At present there are no completely satisfactory means by which carriers of dangerous staphylococcal strains can be identified. The identification of coagulase-positive staphylococci in the throat or nares is not useful information. The only practical method is to determine the phage type of staphylococci from lesions and assume that if personnel are colonized with staphylococci of the same phage type they may be potential sources of infection, and these persons should be removed from contact with patients and receive specific antibiotic therapy.

Treatment

The *treatment* of staphylococcal disease also requires employment of non-specific measures since antibiotic therapy has not proven to be completely successful. Lack of success of antibiotic therapy is often due to resistance of certain strains to antibiotics but may also result from the ability of staphylococci to adapt to adverse environmental conditions. Drainage of localized areas of infection is of primary importance and undoubtedly more helpful than antibiotics when lesions have become well localized by host mechanisms.

When antibiotics are necessary, *in vitro* antibiotic sensitivity testing of the organisms is usually necessary for proper antibiotic therapy. In severe staphylococcal diseases such as endocarditis, osteomyelitis and pneumonia, treatment often has to be continued as long as six weeks after symptoms have subsided.

The treatment of families in which there are recurrent infections has to be individualized, but there are several measures which have proven useful when meticulously observed. Hand washing with soap, which contains a bactericidal material such as hexachlorophene, should be performed several times a day. This soap should also be used for twice-daily baths in patients with staphylococcal lesions. All surface lesions should be treated topically with ointment containing bactericidal antibiotics such as neomycin or bacitracin. Systemic antibiotic treatment should be reserved for persons with systemic symptoms. The antibiotic should be specific as determined by *in vitro* sensitivity tests and the therapy should continue for a reasonable time after subsidence of symptoms. Probably a very important aspect of prevention and treatment of recurrent staphylococcal lesions in families is a simple explanation of host-bacterial interactions in order to provide motivation for continuing performance of the tedious measures necessary to keep the number of organisms in the household at a minimum.

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Worry is interest paid on trouble before it falls due.

William Inge

Lateral epicondylitis or “tennis elbow” is a common musculo-skeletal complaint manifested by pain over the lateral epicondyle and aggravated by resisted dorsiflexion of the wrist. Local instillation of steroids is the treatment of choice.

Lee J. Cordrey, M.D.
Orth. 3:370-62

Roentgen therapy when properly applied is excellent therapy for tenosynovitis. One hundred patients treated by the author indicate the usefulness of this method.

Radiation Therapy for Tenosynovitis of the Shoulder*

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IN RECENT years the glamor of new drugs and new methods has tended to overshadow methods of therapy which have proven their worth in earlier years. Radiation therapy, particularly for benign conditions, has been badly battered by "scare" stories. The purpose of this paper is to outline a conservative form of treatment, i.e., radiation, for tenosynovitis of the shoulder, which, although a benign disease, can cause extreme pain and disability.

There are numerous papers dealing with tenosynovitis and its treatment. Some comparison with other reports has been made, but there has been no attempt to review all of the literature. A consecutive series of 100 cases with up to six years follow-up is presented.

This entity has appeared under various names and was first described as periarthritis of the shoulder joint in 1872 by Duplay. The clinical aspects were described by Codman in 1906, and other writers have presented various clinical and therapeutic aspects over the years. The terminology of this disease has been somewhat confused. The disease referred to in this presentation is tendon inflammation, with or without bursitis, and with or without calcification. In our locality, the terms tendinitis, bursitis and tenosynovitis are used somewhat interchangeably.

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*Read at the meeting of the Canadian Association of Radiologists, Winnipeg, Canada, January 23, 1962.

Anatomy

The shoulder is a synovial joint of the ball and-socket type in which freedom of motion is developed at the expense of stability. The head of the humerus articulates loosely with the glenoid cavity. The joint capsule is attached to the margin of the glenoid fossa and to the anatomic neck of the humerus. The joint is reinforced by the coracohumeral and the glenohumeral ligaments, while tendons and muscles stabilize the ligamentous cuff. The anterior part of the cuff is adjacent to the tendon of the subscapularis, muscle, the superior part to the supraspinatus tendon, and the posterior part to the tendons of the infraspinatus and to the teres minor muscles. The long tendon of the biceps passes antero-superiorally. Joint stability is further increased by the superior arch formed by the acromium process and the coracoid process with the coracoacromial ligament.

A number of bursae are found around the shoulder joint (usually six in number), the largest and most important being the subdeltoid or subacromial bursa, which separates the middle fibers of the deltoid, the acromium and the coracoacromial ligament from the supraspinatus, infraspinatus and subscapularis tendons. The tendon of the supraspinatus muscle is immediately below the floor of the subacromial bursa. This is the tendon that is usually involved in calcific tendinitus.

Etiology and Pathology

The etiology of tendinitis and bursitis is not completely or clearly understood. Codman thought that the cause of the inflammation of the tendon, and eventually of the bursa, was the presence of degenerative material in the tendon. Evidently there is a series of minor traumata from pressure and compression to the musculotendonous cuff, which results in hemorrahage. The injured area may first show metaplasia of connective tissue, but degeneration of fibers and absorbtion of necrotic material occur, followed by deposition of calcium in the necrotic tissue. At the same time, the bursa lying adjacent to the tendon becomes secondarily inflamed, produces excess synovial fluid and becomes distended. The calcium deposition reaches the surface of the tendon and thereby the floor of the bursa, and occasionally it will rupture into the bursal cavity. Some writers have believed the calcium to be located in the bursa originally. Most authors feel that the calcium is first deposited in the tendon and then bursts through into the bursa.

The subacromial bursa and the supraspinatus tendon are particularly prone to injury because of their position between the firm bone structure of the head of the humerus and the acromium process. However, it is well known that many people with calcific shadows in the tendon cuff do not have bursitis; other factors therefore play a part. In other words, one can have tendinitis and bursitis without calcification. Acute trauma is not a very common complaint. Chilling and drafts are sometimes implicated. Usually the patient cannot point to any particular environmental change that caused the attack.

Clinical Features

The diagnosis of tendinitis and bursitis is based upon adequate history, physical examination and roentgen studies. Since pain in the shoulder is a common complaint, and since the etiological factors are variable, assessment may be a problem. The following simple classification as to etiology may be helpful:

1. Extrinsic lesion.
    A. Generalized fibrosis
    B. Cervical syndrome.

2. Intrinsic lesion.
    A. Tendinitis, bursitis, tenosynovitis.
    B. Periarthritis and arthritis.
    C. Trauma and rotator cuff tears.
    D. Bicipital tenosynovitis.
    E. Neoplasms.

3. Unknown causes.

In our practice, since the patients have already been screened by their family physician and X-rays made, most of these possibilities have been excluded. However, one should assure himself that trauma and cervical syndrome have not been overlooked, as these will not respond to radiation therapy. If the patient has sudden, frequently spontaneous, pain in the shoulder with restricted motion, if he holds the arm at the side and internally rotated, if there is tenderness over the bursa, and if calcification is shown near the bursa and shows calcification near the bursa, (45%) we confirm the diagnosis of acute bursitis and tendonitis. At this stage there is no muscle atrophy; there may be pain radiating down the whole arm. There is usually no significant associated illness either at the time of the attack or in the past history. The chronic cases have often had repeated mild attacks, the pain is aching in type, often worse at night and there is frequently muscle atrophy.

Patients are usually in the older age group, all of our cases except 5 being over 35 years of age. We found the right shoulder involved in 54% of the cases and the left shoulder in 43%. A small number (3) had bilateral involvement.

Roentgen Findings

The roentgen examination should include antero-posterior roentgenograms, with the films made while the humerus is in neutral position, internal and external rotation. Also valuable is a view made with the arm somewhat abducted, so that the ray passes inferosuperiorly, giving a lateral projection of the shoulder. Extreme external rotation will show the calcium deposit in the subscapularus tendon, while internal rotation will reveal the changes in the teres minor. Calcification of the infraspinatus tendon is best seen when the film is taken with the shoulder in moderate internal rotation. The supraspinatus tendon is usually seen on the neutral position studies or on the lateral view. We have found, as have others, that there is no significant correlation between the roentgenographic appearance of calcium deposits and clinical features of the condition. There is no relationship between the amount of calcium and the severity of the symptoms. Calcium deposits usually appear as a well-defined, thin, round oval or as irregular shadows located in the antero-superior region of the shoulder, just above the tuberosity or underneath the acromium. In our series of cases, 35% had roentgenographically demonstrable calcium deposits.

Classification

For a proper evaluation of the results of therapy a clinical classification is necessary. The cases are usually divided into three groups:

1. *Acute.* These patients have had a sudden onset of pain in the shoulder accompanied by spasm of the muscles and acute tenderness of the involved tendons, and the findings are typical. Duration of symptoms is from a day or two to 14 days.

2. *Subacute.* These cases are characterized by ache and pain, moderate limitation of movement, little or no localized tenderness. Motion of the shoulder is necessary to accentuate or bring on severe pain. Duration of the symptoms is usually up to eight weeks.

3. *Chronic.* These patients have persistent chronic pain, no limitation of movement and no point tenderness. Symptoms have generally been present for three or four months in these cases.

The chronic cases with acute exacerbation are best grouped with acute cases, for they respond to therapy as an acute case does. It is generally agreed that the best way to cure a chronic bursitis is to have an acute exacerbation and then have that treated.

Treatment

Various forms of treatment have been advocated, including penicillin, vitamin A, physical therapy, ultrasonic waves, traction, diathermy, needling and aspirations of calcific deposits, open surgery with the excision of calcium, and irradiation.

Some authors have felt that no specific therapy is necessary and that the regression of symptoms and absorption of calcium will take place if given sufficient time. It has been generally accepted that conservative therapy should be tried before extensive surgical procedure is employed. Many authors report good results with needling and aspiration of calcific deposits, with the injection of procaine and hydrocortisone. As far as we were able to ascertain from the patients' clinical charts, none of our cases had had needling and aspiration. A good many had had an injection of procaine and hydrocortisone.

Mead describes 47 acute cases treated by one injection (2-4 cc's equal parts local anesthetic and hydrocortisone). Results were excellent in 40 of these 47. In 35 cases which were chronic, but with acute exacerbation, 25 had excellent response. Subacute and chronic cases had poor response. Harmon presented a series of 750 injections in 496 cases with 80% excellent results within 14 days. Two or more injections were required in 54% of the cases. Other authors report up to 85% favorable response in acute cases following injection. Complications are infrequent with this procedure but careful technique is necessary to prevent introduction of bacteria into the joint.

Other forms of therapy such as physiotherapy, ultrasonic waves, and heat, as reported in the literature, require several weeks before relief of symptoms is obtained. Using physiotherapy, Klein and Klemes reported disability of 50 days. Jones, using rest and heavy sedation, got good results in 2 to 4 weeks.

Roentgen Therapy

Our patients were treated with doses of 100 roentgens in air on each of three consecutive days or at most within five to six days. The treatments were alternated between three portals around the shoulder, (AP, superoinferior and PA). None of the patients had had any previous irradiation. Physical factors used were 250 KV, filtration equivalent to 1 mm. of copper, 15 MA, target-skin distance 50 cm., field size, 10 x 10 cm. No attempt was made to prevent overlap of the fields. The review of the literature indicates that the various techniques used in roentgen therapy are not markedly different.

Along with the radiation therapy the patients are told three things: first, that although resting the arm is a useful immediate measure, active exercise should take its place as soon as possible. Along with the therapy we ask the patient to move the shoulder as much as possible and to take prescribed exercises (pendulum swinging of arm, crawling hand up wall). Most patients, if made aware of the dangers of immobilization, will move the shoulder in spite of pain; and nearly all patients, when they come in for the third treatment, will be moving the shoulder without much difficulty. We tell patients never to use a sling or splint.

Secondly, since symptoms may become more severe after the first radiation therapy, we point out this possibility to the patient so that he will not become discouraged. Thirdly, we tell the acute cases that they will begin to have relief in 48 hours probably first noted by being able to sleep through the night. The subacute cases we offer relief in a few days, and we tell the chronic cases relief may not be expected for 4 weeks or so.

After the three treatments are completed the patient returns in three days. If the symptoms are relieved, nothing further is done. If the findings persist, fourth and fifth treatments, three days apart, may be given.

Results

According to the literature, patients classified as having acute symptoms show from 87% to 100% improvement with radiation therapy. Those classified as chronic have a 33% to 95% favorable response. Late follow-up reports have been given in two series, Kratzman and Frankeo, and Shoss and Otto. In both these series the response to irradiation in acute cases was 98% complete disappearance of signs and symptoms. In chronic cases 75% showed good results. Reinhold and Sauerbrey report 917 patients treated with X-rays in both acute and chronic cases. Of these, 75.9% were cured, 20.8% improved and only 3.3% were refractory to treatment.

Our method of follow-up was by personal contact. Each patient was asked to report either in person or by phone a week after the last therapy and then in another week if not better. The long-term follow-up was carried out either by letter to the patient or by review of the patient's clinical chart at the office of the family doctor.

100 Consecutive Cases Treated With X-Ray Therapy.

Group	Number	Response		
		Cured	Improved	Poor
Acute	56	52 or 95%	3	1 or 2%
Subacute	21	15 or 71%	5 or 24%	1 or 5%
Chronic	23	12 or 52%	8 or 35%	3 or 13%

The patient was termed cured if he exhibited complete objective and subjective relief. A response would often begin to appear within 48 hours. Only three doses were necessary in

65% of our acute cases. In other words these patients were well in 3 to 5 days. Another 21% required a fourth dose, while 14% required 5 doses. Of the subacute cases 63% required three therapies, another 31% received a fourth dose, while only 6% required five. In the chronic cases 29% received three doses, 35% four doses and the other 35% five doses. Only one acute case failed to improve, and this patient had a history of a fall while playing tennis and perhaps had a capsular tear rather than a tenosynovitis. Of these acute cases 95% were completely well in 10 days. The subacute cases showed 71% cured, and 24% improved within 10 days. The chronic cases improved more slowly, and is was not until after four weeks that 52% could be termed cured. However, many chronic cases continue to improve, so that at the end of the three months many more are much improved or cured.

Unfortunately we were not able to obtain follow-up films on any of our cases and cannot tell whether the calcium disappeared. It has been well documented by others that the calcium does disappear in as short a time as a few days to six weeks after irradiation. It didn't seem to make any difference in the response whether or not our patients had had previous therapy. Steen has reported that previous treatment with other types of therapy tends to give less favorable results when roentgen therapy is applied. Our experience has been that it is the time interval that is important. In other words, the sooner we can get the patient to treat, the more rapid and complete the results will be.

The reason for a favorable response in roentgen therapy in symptomatic tenosynovitis has never been clearly determined. Certain biological effects of radiation are known. The hyperemia that occurs after a dose of roentgen therapy improves circulation. This may reduce the edema on the nerve endings, which causes the pain about the joint, and it is possible that toxins are present and are removed. Furthermore, radiation may aid in the removal of calcium by the production of the hyperemia.

Review of these 100 cases also revealed that only one of these patients received a second course of therapy to the same shoulder. This was 3 years later and required only 200 r. for recontrol. None of the other 99 has had an acute recurrence. Three had the other shoulder treated, two with good results on both sides, the third with a good result on the first side, and a poor result on the other.

Conclusion

Most cases of acute tenosynovitis improve in time without treatment. Therapy, however, will prevent patients from suffering long periods of disability and discomfort. By conservative methods, such as radiation, one can lessen the period of disability and attempt to prevent such complications as adhesive capsulitis, which may result from continued immobilization due to pain. Our results show that radiation therapy is a very effective form of treatment. The dosages necessary are small, with no morbidity or risk from the therapy. The results are better than any other method; they follow considerably sooner and last much longer. The recurrence rate in these cases was practically nil, and some cases have been followed for several years. Acute cases respond very rapidly; although chronic cases respond more slowly, a high percentage will obtain relief. In fact in subacute and chronic cases, radiation can offer much more than other forms of therapy.

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The new comprehensive clinical program in the University of Minnesota Medical School has been tested in one of several ways. The authors demonstrate a significant improvement in completion of satisfactory consultations according to their study.

The Medical Student and the Pediatric Consultation*

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EDUCATION at all levels needs some sort of "feedback" to the teacher, assessing the success of the teaching and thus helping keep the content vigorous. Sometimes medical faculties measure success by the number of graduates holding full time positions in academic medicines, sometimes by the standing of their classes in the National Board Examinations, but in our opinion the best single measure of the effectiveness of medical educators is the quality of care patients receive at the hands of their student graduates. The fact that the latter is seldom measured reflects in part the difficulty of defining and measuring good practice, in part the lack of interest in this particular measure, and finally the difficulty of adequately sampling professional skill of the graduates after they have left medical school.

During the past year we have had an opportunity to test the effect of a curriculum revision - The Comprehensive Clinic Progam(1) — on the quality of care which senior students provided their patients. The Comprehensive Clinic Program at the University of Minnesota provides the student with an active role in patient care emphasizing the doctor-patient contract as the unit of medical practice. This paper is a report on the changes in patient care which have occurred. Specifically this report is about the effectiveness of the Comprehensive Clinic student in the pediatric consultation.

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General Background

The defined purposes of the University of Minnesota Medical Center are:

(1) To serve as a medical care center for the medically indigent people of Minnesota.

(2) To provide consultation service for any patient referred by his physician for further study and treatment.

(3) To teach medical students by providing an opportunity to observe and to participate in the care and treatment of patients.

(4) To advance medical knowledge through clinical and basic type research.

The Medical Center, which has been built largely by gifts from the people of the state is owned by the State of Minnesota. The responsibility for its function is delegated through the legislature to the University Board of Regents, and to the medical and hospital staffs.

Previously the patient care was given by the clinic intern and residents and occasionally the director of the clinic—an instructor on the Pediatric Staff. The residents rotated services every two months so that there was little continuity of patient care or responsibility.

The Comprehensive Clinic Program

In the Comprehensive Clinic Program the senior medical student is a member of the Out-Patient Clinic and the patient's doctor under the supervision of the medical school staff. His functional status is equivalent to that of an intern. During his six months on the Comprehensive Clinic Program he cares for his pediatric patients on each visit to Pediatric Clinic and the other specialty clinics.

Continuity of care and the doctor-patient relationship was further increased by adding six members of the pediatric faculty to the clinic staff, one full time and five one-fifth time.

The Study

Three groups of children were studied; 76 seen by interns, residents and one staff physician in July 1958, 70 seen by interns, residents and one staff physician in July 1959, and 57 seen by medical students supervised by residents and staff physicians in July 1960. The care provided these children was studied for the first six months after their initial clinic visit for adequacy of consultative care.

TABLE I

Categories Compared	Ratios of Percentages		
	1958	1959	1960
Male/Female	51/49	57/43	58/42
White/Other	99/1	99/1	98/2
Prot./Cath.	66/30	67/31	68/27
Twin City/Out State	50/50	40/60	46/54

Likeness of the groups of children seen in July 1958, 1959, 1960

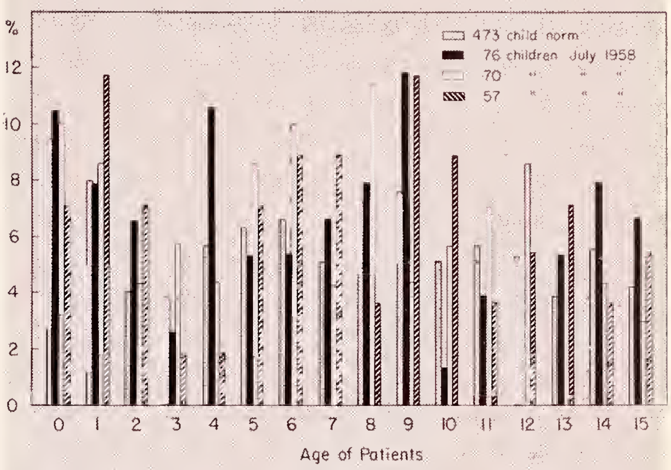


Fig. 1

The data collected from each chart for analysis were age, sex, race, religion, home address, and the dates of each clinic appointment, hospitalization, and letter.

In order to provide similar groups for comparison all the new patients seen in July 1958, 1959, 1960 were studied. The first five items were checked to see if the groups were indeed similar. In Figure 1 is shown the close correspondence of the age distribution of each group with the pattern of age distribution for a larger group of newly referred children. The other parameters were also quite similar. (See Table 1)

No effort was made to place a value assessment on items such as the accuracy of diagnosis, appropriateness of laboratory work, or the incisiveness of the workup. These items are subjectively measured and will be the subject of a subsequent report. Instead objective criteria were selected that reflected the quality of the consultation and that could be held constant for future studies.

We adopted the following as minimal objective criteria of a satisfactory consultation:

(1) Completion of the consultation within six months after referral.

(2) Return of the patient to his private physician.

(3) A letter to the referring physician soon after the initial visit and at the completion of this consultation—at least at the completion of the consultation.

Results

Six months after the first clinic visit 11% of the 1958 group, 13% of the 1959 group and 30% of the 1960 group (The Comprehensive Clinic Program students) had satisfactory completion of their consultation in the Pediatric Clinic (Figure 2). At some time during the six months after the initial visit 36% of the 1958 group, 37% of the 1959 group and 30% of the 1960 group were hospitalized one to three times.

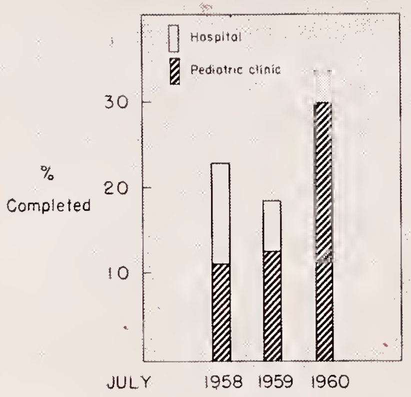
The percentage of satisfactory consultations increased by these hospitalizations was 12% for the 1958 group, 6% for the 1959 group and 3% for the 1960 group (Figure 2).

Some patients were lost to the clinic sometime during the six months of study because they failed to keep their appointment: 16% of the 1958 group, 23% of the 1959 group and 9% of the 1960 group (Figure 3). However, appointments were failed four times more frequently by the 1959 group than the 1958 or 1960 groups.

At the end of the six months of study the majority of the remaining patients were being followed in the clinic for definitive problems: 54% of the 1958 group, 47% of the 1959 group and 47% of the 1960 group. A small number, 3% of the 1958 group, 11% of the 1959 group and 10% of the 1960 group had an indeterminate status, i.e., no more appointments were planned but a discharge letter to the referring physician had not been written.

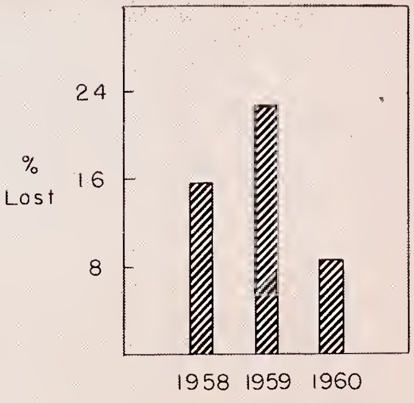
Since the consultative report and the discharge letter are nodal points in the care of the referred patient they were studied in more detail. Figure 4 shows the cumulative percentage of referring physicians receiving a letter each week after the patients initial clinic visit. The 50% point for the 1960 group was reached in less than one-half the time required for the 1958 and 1959 groups. Six months after the initial visit over 20% of the 1958 and 1959 groups still needed to have letters written to their doctors.

Another way to analyze this promptness of correspondence with the referring physician was to count the number of clinic visits before a letter was written. Letters were written for 54% of the 1958 group, 59% of the 1959 group and 75% of the 1960 group after three days of clinic visits. All of the patients in the 1960 group had letters written after a maximum of six days of clinic visits (Figure 5).



Percentage of consultations satisfying minimal acceptable criteria for a satisfactory consultation completed by the pediatric clinic and hospital service

Fig. 2



Percent of newly referred pediatric patients lost to the clinic because of failed appointments

Fig. 3

In both the 1958 and 1959 groups sixteen children did not have letters sent to their physician. These children were seen in the clinic 1 to 17 times.

During each of the first six weeks after the initial visit the children in the 1960 group revisited the clinic at a rate 10% higher than for the other two groups, but in each of the subsequent weeks all groups returned with a similar reduced frequency.

Discussion

Since patient care is the point of student teaching and medical research at the University, all attempts to improve the teaching and research can be considered to succeed or fail in that they improve or impair the provision of high quality patient care.

The above changes in the objectively defined parameters of minimumly acceptable consultative care indicate that the Comprehensive Clinic Program is effective. Important improvements have been (1) a decrease in the percentage of required hospitalizations (2) an increase in the number of satisfactory consultations completed by the Out-Patient Pediatric Clinic (3) a decrease in the portion of patients who fail their appointments and so are lost to the clinic (4) an increase in the number of referring physicians whose requested consultation is answered by a letter and (5) a decrease in the time required to answer the referring physicians request.

These improvements in patient care are attributed first to the success of the establishment of a contract between the student doctor and his patient, and secondly to an increased participation of the pediatric faculty in the supervision of the out-patient care.

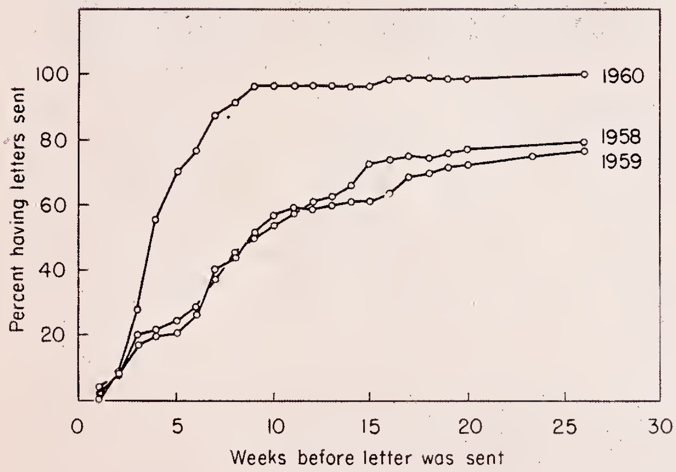


Fig. 4

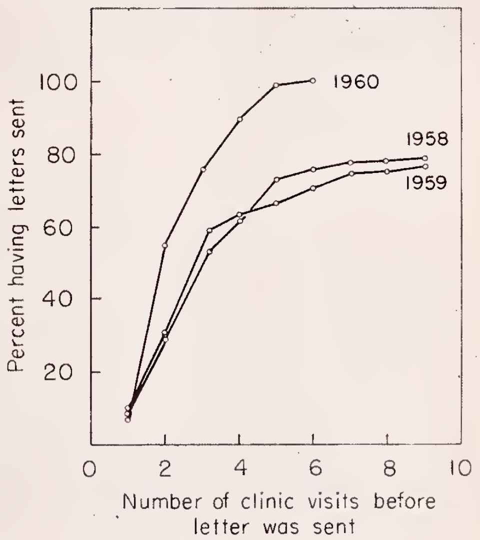


Fig. 5

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Happy the physician who is called in at the end of the illness.

Rabelais

THE DOCTOR AS PHILOSOPHER

Rudolph Hermann Lotze 1817-1881

Thus far an English, an American, and a French philosopher have appeared in our doctor-philosopher series; now we come to a representative German, Rudolph Hermann Lotze.

Lotze, the son of a military physician, was born in 1817 at Zittau, was educated at the Gymnasium there, and later attended the University of Leipzig, becoming a medical doctor at the age of 21. After practicing in Zittau for one year, he returned to Leipzig to lecture there on medicine for a year. Preferring philosophy to medicine, however, he spent the next 37 years lecturing at Gottingen on various phases of philosophy. The authority, G. Stanley Hall, says: "He (Lotze) usually lectured at 10 A.M. and 4 P.M. daily, and the number of attendants on his various courses during all these years has been computed and found to range between 6 and 99.

From the small attendance we can only assume that Lotze's courses were not popular, either because of their subject matter or because the delivery was "monotonous and unattractive." Yet Hall tells us that Lotze was a successful teacher; he did not indoctrinate his students, but rather stimulated them and drew them out — the true aim of education.

Dr. Lotze first became generally known through his work on pathology and therapy published in 1842. His book on physiology was published in 1851 and another of a similar nature was published in 1852.

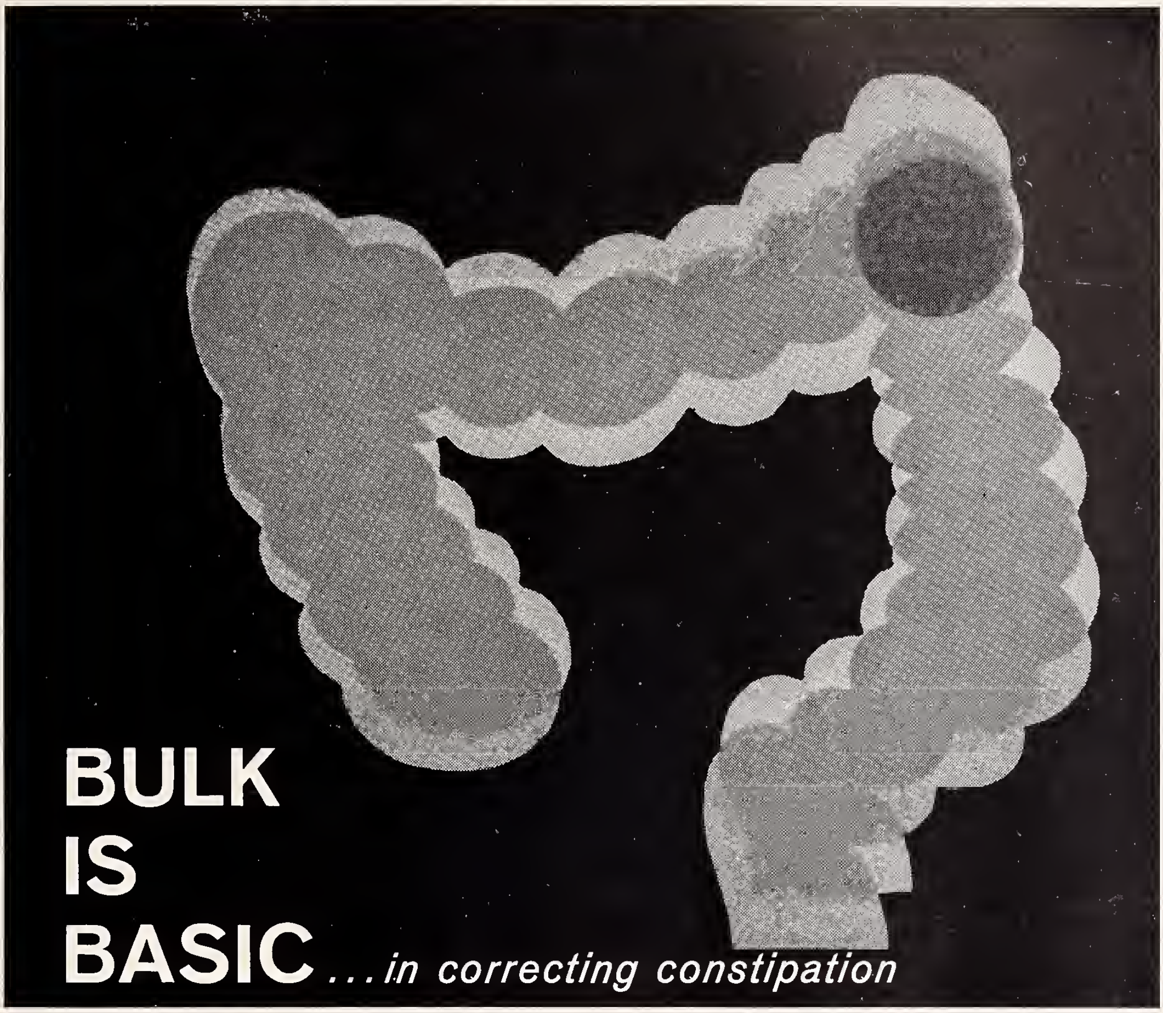
Though his life seems outwardly uneventful, it was rewarding and fulfilling in a domestic sense, as he was very happily married and had three sons. A book of poetry he wrote and published just prior to his marriage, when his soul was probably fired with love, gives us one of the rare, warm, and revealing glimpses into his personal life. The poems were light, lyrical responses to Nature: the moon, the stars, the night, the wind, etc.

Lotze's work consists chiefly, however, of philosophical books, though he did write "Medical Psychology," an important contribution in that it was the first effort to bridge the gap between the abstract concepts of idealistic philosophy and the concrete facts of physiology.

In the foregoing works Lotze endeavored to show that the laws which govern particles of matter in the organic world would govern them as if they had been joined into an organism. Final causes, vital and mental forces, and even the soul itself can act only through the inexorable mechanisms of natural laws. But this mechanical view of nature is not identical with the naturalistic.

Lotze's time materialism on the one hand and idealism on the other were the Scylla and Charybdis of philosophy: a previously incompatible and irreducible dualism. Lotze sought to iron out the contradictions between visible phenomena manifesting in the world and invisible laws governing the universe; to resolve the

(Continued to Page 735)



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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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apparent conflict between the objective and the subjective; to reconcile empirical observation with intuitive perception. "On the one hand, science, with its severe logic of causation and mechanism, law, order, and the conservation of energy . . . on the other hand the human heart with its needs, hopes, wishes, and even dreams."

This seeming dichotomy is aptly illustrated by Hall as follows: "To science, the moon is a corpse, a dead world, very cold, lifeless, airless, hung in the sky as a ghastly prophecy of what our earth will one day become . . . To the heart, on the other hand, the moon is not only our nearest celestial neighbor, but is eloquent of love, is soothing, beneficent, the measurer that metes out the year in weeks and months, the controller of tides in the sea . . ."

Now just how does Lotze integrate the two aspects of reality without impairing the validity and identity of either, but achieving harmony and equilibrium between them to create an organic whole out of science in the form world of the senses and philosophy in the value world of the spirit? The answer is: through Substance. And what is this Substance? A mysterious and fiberless something: a hypothetical kind of parenchyma. We do not yet know what it consists of; we have to evolve into higher, more ideal human beings in order to realize its all-pervading presence.

Lotze's most important and influential books include: "Metaphysik" (1814), an exposition of the nature and operation of the universe through laws functioning beyond the physical phenomena of the world; "Logik" (1843), which deals with the criteria for the validity of thought and the demonstration thereof; and "Microcosmus" (1856-1864), which presents ideal man as a miniature epitome of the universe.

He opposed Kant's contention that the highest good is a will determined purely by duty. To make an abstract relation a good seemed to him altogether contrary to experience. In reality, nothing is good except self-satisfaction. A benevolent act is good only if it brings happiness to some other being. And to Lotze, since values are as much a constituent part of the world as existence and law, it was necessary to think of the creator as the one for whom things have eminent worth.

In April of 1881 Lotze went to Berlin, where his lectures were much better attended; but he lived only until July 1 of that year.

No philosopher was ever more sophisticated than Lotze. If he returns to an essential religion, he does so with due deliberation. Lotze exerted the most profound influence on German philosophy following the death of Leibnitz. He died in 1881.

Edward Podolsky, M.D.
1049 East 18th Street
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A gentleman is a man who can disagree without being disagreeable.

Author Unknown

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Editorials

CATASTROPHIANS

There are those who seem bent upon making it appear that medical costs are always exorbitant. They seem to enjoy the use of the word "catastrophic." It is, to be sure, one of the ten-dollar words, but must we abuse it?

Leo A. Nash, M. D., chairman of the committee on aging, has indicated that approximately eighty percent of individuals over seventy were in the hospital for less than twenty days prior to death. Only one percent were confined to the hospital for more than ninety days.

A further review of the records from Blue Cross in Minnesota indicates that only 3.6 percent of the hospitalized patients had a hospital charge of more than $1,000. This is less than one percent of Blue Cross membership.

In a Renville County hospital, where twenty-one percent of the patients were found to be over 65 years of age, their total hospital bill averaged $350. This is probably a fair sample of other rural hospitals. About sixty percent of these elderly patients carried some type of hospital insurance. Ninety-five percent indicated they had spent less than $500 for medical care in the preceding year. The average per capita expenditure for medical care including hospitalization and drugs, as indicated by Blue Cross, was found to be $177.* The Blue Cross in the Twin Cities has found the average cost per patient-day to be $38.

Sixty-two percent of individuals older than 65 years have private assets of more than $5,000, and forty-seven percent have incomes of more than $1,000. For a married couple these assets and incomes must be multiplied by two. In Minnesota less than one percent of the total population (seven percent of those over the age of 65) were considered to be medically indigent.

In comparing the economic status of those over 65 years of age with that of the total population, life insurance, home ownership, mortgage-free homes, marketable securities, liquid assets and debts, it appears that these older people are better off than the total population:

	Total Population	Over 65
Home ownership	58%	66%
Mortage-free home	26%	55%
Marketable securities	13%	14%
Liquid assets	76%	70%
Debts	68%	31%

Less than twenty percent of the Blue Cross membership have a hospital illness every year.

A group of individuals were asked if they knew specifically any instance in which an elderly individual did not receive medical care who needed it. No specific instance could be cited, though the friend-of-a-friend-of-mine-technique was occasionally used.

There may be those who have not paid for their medical care, but they received the care, nevertheless.

It is realized that figures can be confusing and, to be sure, if these figures are said in a slightly different tone of voice they can be made to sound confounding. The catastrophians seem to be able to make them sound like an indictment against those who might be endeavoring to make them sound encouraging. Must we worry our lives away with the remote possibility that a catastrophic illness will consume us? Let's not abuse the term.

Carl O. Rice, M.D.
Minneapolis, Minn.

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* Financing Health care of the Aged—Blue Cross Association, 840 North Lake Shore Drive, Chicago, Illinois.

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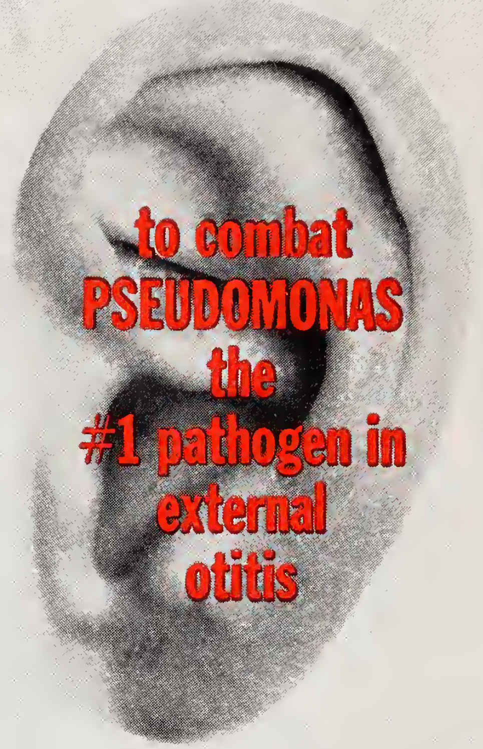

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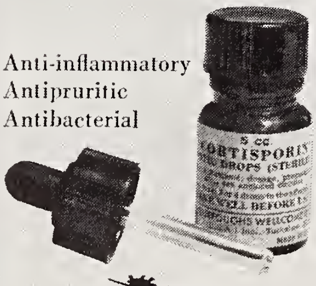

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A BUMPER CROP OF MUSHROOMS

> *"Fungi Ben Muscherons. There be two maneres of them, one manere is deadly and sleeth them that eateth of them, and be called tode stoles, and the other doeth not."*
>
> *The Great Herball, 1526*

The rain in Minnesota in the spring of 1962, 8.03 inches reported in Minneapolis in the month of May, is the heaviest in half a century.* Among other effects of this immoderate moisture is the bumper crop of mushrooms in southern Minnesota. The cool humid spring has indeed converted the region into a mammoth fungus incubator. Every morning tons of edible varieties push through the humid earth, expose their inviting caps, some to be gathered as epicurean delights by a small but growing band of intrepid amateur mycetologists. In Minnesota, as Clyde N. Christiansen points out in his guide to local mushrooms, there are four varieties of mushrooms that are readily identifiable, plentiful, and edible. These are puffballs, morels, shaggy manes, and polypores. These can be identified by pictures. Christiansen describes a simple technique to obtain a spore print, which enables the amateur to identify many other varieties suitable to the table.

A mushroom placed gill-side down on a paper and covered with a water glass will shed its spores in the course of one to eight hours, printing a characteristic pattern. If the mushroom is partly over black and partly over white paper, the spore print can be classified as either black or white. This is of great importance in mushroom classification, since the color of the spore print is so characteristic and because the amanita group and most toadstools are in the white spore group. However, one cannot depend on group classification, and the mushroom that is to be served at the table must be completely identified, as Christiansen points out.

Mushrooms are not limited to the fields and meadows of the countryside, where they are found in profusion, but also abound in any moist, grassy area, such as lawns, boulevards, and parks of the cities. Thus they are available to everyone, and there is no doubt that many more mushrooms than usual will appear on Minnesota home menus. There is, therefore, some possibility that a few physicians will be confronted with cases of mushroom intoxication. In the American literature of the past 35 years, 24 fatal cases of mushroom poisoning have been reported, the greatest number due to varieties of amanita (Buck). Amanita acts slowly and may not become symptomatic for six to eighteen hours. It is a renal and hepatic toxin that may be treated in similar fashion to carbon tetrachloride poisoning. Buck suggests the following line of treatment:

1. empty the stomach and bowels if ingestions of toxic varieties has occurred or is suspected, even though no symptoms have appeared. Induced vomiting is preferable to lavage, since the mushroom particles may be too large to be returned through a tube.
2. sweating, constricted pupils, and cramps suggest autonomic stimulation and indicate the need for atropine as an antidote.
3. symptomatic treatment is important in every case. Hydration should be maintained, particularly in the presence of nausea and diarrhea.
4. every effort should be made to identify the offending fungus. The uneaten, suspected food and the vomitus should be submitted to a botanist or qualified toxicologist for identification.

Reuben Berman, M.D.
Minneapolis, Minn.

References

1. Buck, R. W.: "Mushroom Toxins and Review of the Literature," *New England Journal of Medicine*, 265:681, 1961.

2. Christiansen, Clyde N.: *Common Edible Mushrooms*, Branford Company, Newton Center, Mass., 1959 (Clyde N. Christiansen is assistant professor of Plant Pathology at the University of Minnesota).
(Clyde N. Christiansen is assistant professor of plant pathology at the University of Minnesota).

*May 1962 is the third wettest month recorded at the Minneapolis Weather Bureau station. In 1906 10.33 and in 1908 8.14 inches were recorded.

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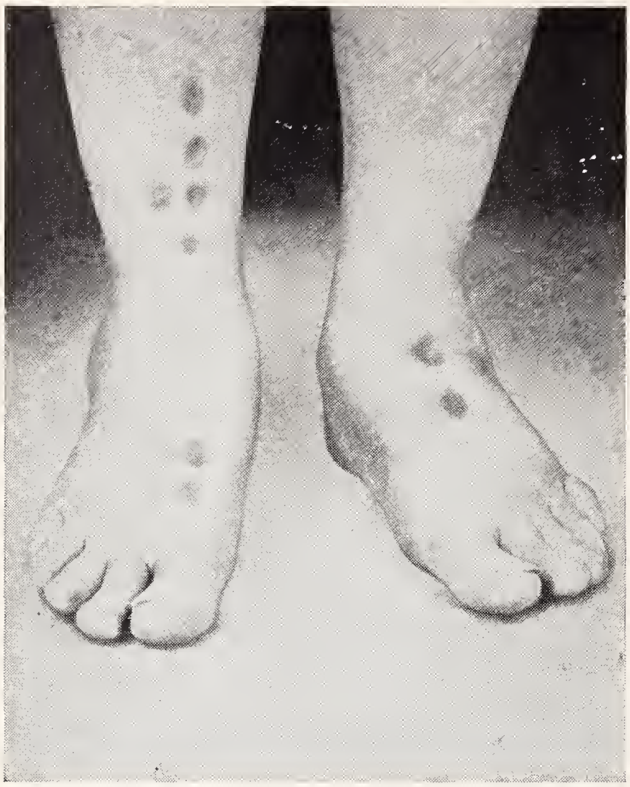

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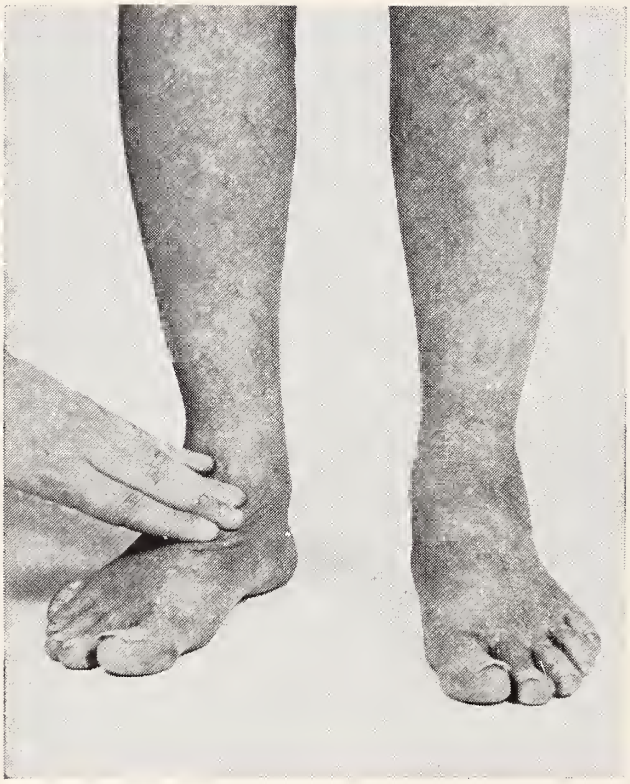

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DOES FAT IN THE DIET CAUSE ATHEROSCLEROSIS?

One gains the impression from reading the daily newspapers and popular magazines that this question can now be answered definitely in the affirmative. Advertisements for various brands of table spreads and shortenings convey the notion that substitution of vegetable fats in the diet will provide protection against heart attacks. On the other side of the argument is the dairy industry, with the point of view that the case is far from proved. In the face of this type of controversy, what should the practicing doctor tell his patient? Should he tell him that, in truth, the issue is not entirely settled, and, until it is he should continue to eat as he pleases? Or should he advise him that the evidence, although not conclusive, is good enough to justify a change in habits? If he adopts the former attitude, he runs the risk of depriving his patient of the benefits of a treatment which may prolong his life. If the latter, he is contributing to a trend which is causing serious trouble to a segment of our economy, perhaps unnecessarily.

This is a real dilemma, and the necessity to make a choice is quite unpleasant. In my view the patient and the public should simply be given the facts with as little bias as possible, and the decision is up to them. These facts are as follows:

1. In some parts of the world the incidence of coronary heart disease is far lower than in the United States.
2. Among the differences noted in these "protected" populations are low economic status, low saturated fat in the diet, and low blood cholesterol.
3. Substitution of polyunsaturated fats for saturated fats in the diet of Americans causes a decrease in blood cholesterol.

Please note that we have no proof that the low blood cholesterol in the populations with little coronary disease is the *cause* of the low incidence. However, nobody has been able to offer any other reasonable explanation. We do not *know* that alteration of the American diet will change the incidence of heart disease one iota. Furthermore, we are not likely to know for several more years. In the face of this kind of uncertanty, the individual must decide whether he prefers to change his diet in the hope that it might help, or adopt a wait-and-see attitude and run the risk of missing an opportunity.

For the moment, we must accept the fact that the immediate future offers nothing but uncertainty. All that we can do is work together to find the truth, regardless of where the chips may fall. The medical profession has to buckle down to a slow, tough, expensive piece of research which will require so many collaborators that none will get much personal glory out of the ultimate success. The vegetable oil people should desist from trying to capitalize on the muddled situation to their own financial advantage. The dairy industry should join in the effort without prejudice and be ready to accept the possibility that the decision may go against them. And as for the general public, they can make up their own minds with the assurance that in 1962, their guess is as good as anyone's.

Ivan D. Frantz, Jr., M. D.
Research Professor
Department of Medicine
University of Minnesota

AMERICAN PHYSICIANS ART ASSOCIATION

The Salk Foundation for research in Poliomyelitis is sponsoring a tour of the American Physicians Art Association. The purpose of this tour is to raise funds for research in the field of Poliomyelitis. One hundred art pieces will be selected from previous winners of the American Physicians Art Association shows held in conjunction with AMA meetings.

There will be a showing of these exhibits in Minneapolis on July 17-21 at the Walker Art Institute. Interested physicians are requested to submit pieces of art to Ferdinand Zinter, M. D., 600 Physicians and Surgeons Building, Minneapolis, Minn.

End

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Abstracts and Briefs

TOPICAL STEROID THERAPY

Assay studies were performed on 6 adults and 4 children following total body inunction of a topical corticosteroid, flurandrenolone (cordran), twice daily. The patients had not been given any oral or parenteral steroids for at least 3 months prior to the onset of the study, and the skin of these patients was either normal or extensively involved. The following baseline studies were performed on these 10 patients after 3 days and again at the end of 7 days of therapy: urinary sodium, urinary potassium, urinary chloride, urinary creatinine, urinary 17-ketosteroids, urinary 17-corticosteroids, plasma sodium, plasma potassium, plasma chlorides and plasma corticosteroids. Next, 136 outpatients were studied for clinical signs of steroid absorption. They also used total body inunctions of the topical steroid even for small areas of dermatitis.

All laboratory studies were found to be within normal limits and there were no clinical signs of side effects, such as weight gain or edema, thus supporting the conclusion that no steroid absorption occurs.

These studies would seem to indicate that there are no systemic changes from the use of large amounts of topically applied steroids.

A. S. Zelickson, M.D.
Minneapolis, Minnesota

Goldman, L. and Cohen, W.: "Total Body Inunction as Topical Corticosteroid Therapy." AMA Arch. of Derm. 85:146-149, 1962.

A NEW APPROACH TO CARDIAC RESUSCITATION

The authors have reviewed their experiences in the past two years in their surgical service at Johns Hopkins University.

There were forty patients studied. The aim of the method is to maintain the viability of the vital centers by external massage and artificial respiration until the body can provide its own support. The heart is compressed between the sternum and the thoracic vertebral column by exerting pressure with the heel of the hand on the lower sternum sixty to eighty times per minute. By this method a systolic pressure as high as 200 millimeters of mercury has been measured. The peripheral diastolic pressure is always low, in the range of thirty to fifty.

In the operating room ninety-six percent of patients with cardiac arrests were resuscitated to pre-arrest central nervous system status. However, of the post-operative cardiac patients, only seventy percent were resuscitated to the pre-arrest central nervous system status.

The duration of the massage ranged from a few minutes to more than one hour. An electrocardiogram was obtained as soon as possible and ventricular fibrillation, when determined to be present, was treated by external defibrillation. In addition, drugs were administered as necessary. Almost universally a vasopressor drug was given if cardiac action did not return within two minutes. Five-tenths of a milligram of epinephrine was found to be the most beneficial. Calcium chloride, 0.5 to 1.0 gm., was given to strengthen weak heartbeats, and, if good action did not return within five minutes, sodium bicarbonate was given in 1.9 or 3.75 gm. doses to reverse the acidosis. Quinidine or procaine amide was given as an aid to combat myocardial irritability and to enhance ease of defibrillation. Occasionally Norepinephrine was needed to support arterial pressure and on occasions hypothermia was used. Intravenous urea was employed to combat cerebral edema.

Post mortem studies of hearts that had been subjected to external cardiac massage revealed no abnormal changes attributable to the massage. There was, however, an occasional fractured rib, but this did not constitute a serious problem. No other complications occurred within the operating room. However, outside the operating room, such complications as one case of inferior caval-right atrial tear, three cases of pneumothorax, a laceration of the liver, and a subcapsular liver hematoma were observed. These problems likely occurred from improper application of pressure.

It is certain by this time that external cardiac massage is an extremely useful method of resuscitation and in most instances will likely replace the internal massage. It would appear that many ancillary medical personnel should be trained in this method in order to save vital seconds and minutes, for it does not require employment of the sometimes difficult decision to open a chest. Even the weak heart action which might possibly spontaneously recover is assisted by this method.

J. H. Strickler, M.D.
Minneapolis, Minnesota

Jude, J. R., Kouwenhoven, W. B., and Knickerbocker, G. G. Ann. Surg. 154:311, Sept. 1961.

Continued

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CARCINOMA OF THE GALL BLADDER

An analysis is presented of 132 patients found to have carcinoma of the gall bladder during surgery for biliary disease at Columbia Presbyterian Medical Center in the thirty year period ending in 1960. The incidence of primary carcinoma of the gall bladder was 0.018 per cent of all adult hospital admissions, and 1.8 per cent of all patients undergoing gall bladder surgery. Ages ranged from 36 to 84 years with an average age of 61. Women were more commonly afflicted in a ration of 3.5 to 1. The most common clinical manifestations were pain, jaundice, and recent weight loss.

In only 22 instances did it appear at the time of surgery that the gall bladder could be resected with a probability of cure. Of these 22 patients there were only seven long-term survivors. In none of the seven had carcinoma been diagnosed pre-operatively.

Eighty-nine percent of the series with primary gall bladder carcinoma had associated cholelithiasis.

The study emphasizes the poor curability rate for this neoplasm due to inability to distinguish clinically early symptoms from those of non-malignant biliary disease, and due to early extension of the primary lesion to adjacent vital structures. It also directs attention to the high incidence of cholelithiasis in patients with carcinoma of the gall bladder.

These data would tend to support a somewhat controversial hypothesis that an otherwise good risk patient with cholelithiasis, even though asymptomatic, should have elective cholecystectomy to preclude the development of carcinoma, as well as the more common complications of acute cholecystitis, choledocholithiasis, cholangitis and pancreatitis.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

Gerst, Paul H.: Primary Carcinoma of the Gall Bladder: A Thirty Year Summary. Ann. Surg. 153:369, March, 1961.

SURGICAL EVALUATION OF BLOOD VOLUME

Walters studied blood volume deficits in a series of patients about to undergo major surgery, employing the Evans Blue method. He points out that the usual practice has been to compare measured blood volume with a normal value predicted from body weight or height. This he believes has given rise to errors in interpreting results because of the wide variation normally found when blood volume is related to body weight or height, not necessarily related to weight change. He feels that blood volume falls only late after body fat has been lost and loss of lean body mass has occurred.

In this series the blood volume deficits were smaller than those previously reported in similar series. Walters believes that preoperative transfusion is indicated only when the actual measurement of blood volume demonstrates a low value compared with lean normals. In general a value of more than 7.5 grams will probably not be associated with a blood volume deficit of clinical significance while a value of less than 6 grams most certainly will.

The author feels that patients having undergone marked loss of lean body weight may have some reduction in blood volume even in the absence of anemia, but it is unlikely that a rise will be produced by transfusion in such patients. This, however, may result in increased susceptibility to the circulatory effects of hemorrhage and Walters recommends replacement in such cases, best being given during operation rather than before, since only then will the transfused blood be retained in the circulation.

The effective increase in blood volume is produced by transfusion only if severe anemia is present. Too much importance has been attached to blood volume measurements as an indication of the need for preoperative blood transfusion. Such determinations are of little value owing to the difficulties of predicting the patient's optimum. Finally, the hemoglobin concentration is the best index for a need for transfusion.

The author's conclusions are at moderate variance with the studies of Champs Lyons of 15 to 18 years ago. The point in regard to the failure of maintaining expanded blood volume by preoperative transfusion in the absence of anemia may be valuable. Recheck studies would seem to be indicated in view of the common custom of transfusing patients having hemoglobin considerably above the 7.5 level which Dr. Walters suggests as the point above which no transfusion is needed except at operation. No mention was made in this study of red cell mass replacement, a very useful device in a patient having essentially normal volume but decreased oxygen carrying capacity by virtue of hemoglobin levels below 11.

J. H. Strickler, M. D.
Minneapolis, Minnesota

"Chronic Oligemia" in Surgical Patients, G. Walters, M.D., Royal Infirmary, Bristol, England. Ann. Surg. 153:507, April, 1961.

MANAGING LUNG ABCESS

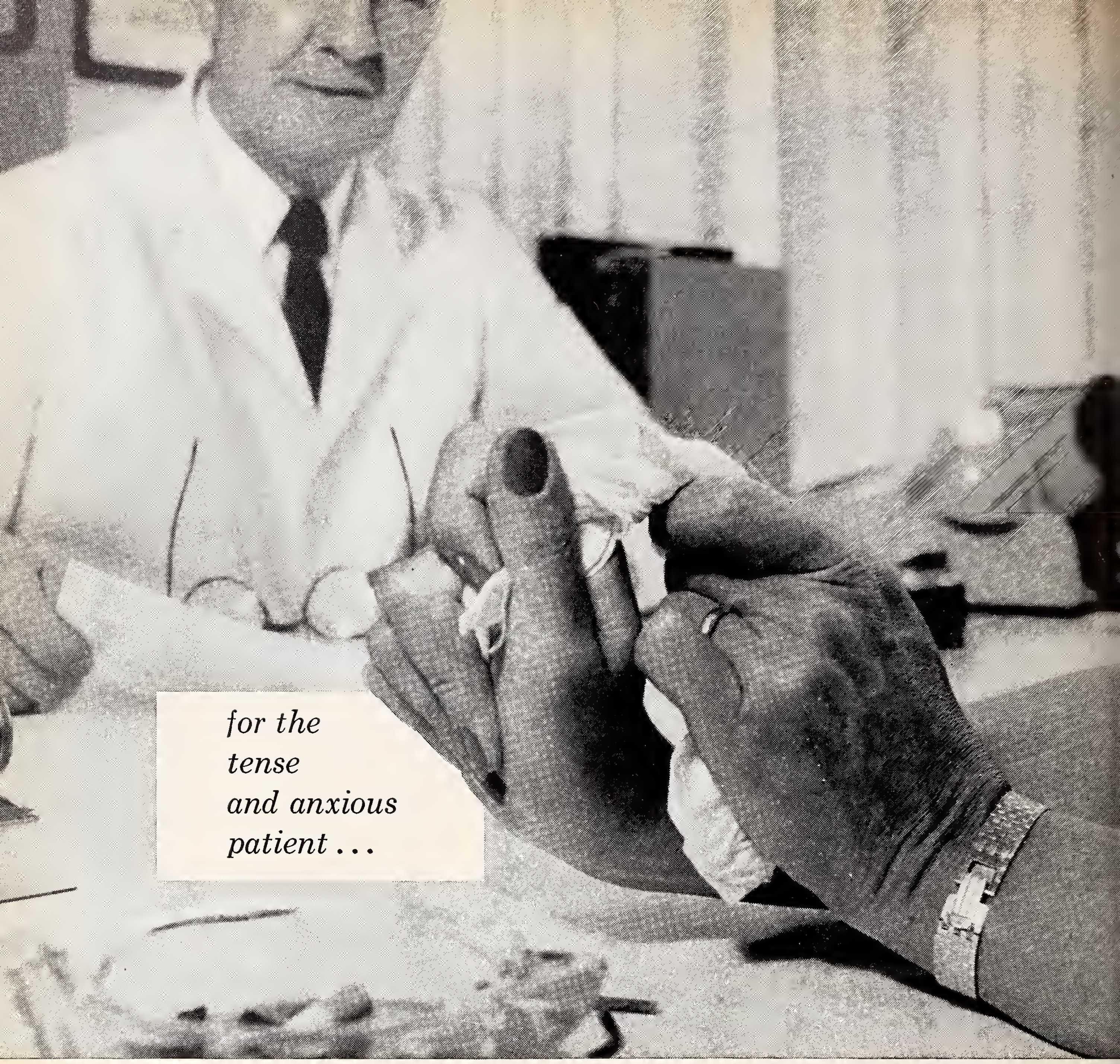
The authors define a primary lung abscess as a putrid cavity formation where no local predisposing factor can be demonstrated at the site of abscess. Thus, infections secondary to neoplasm, infarction, cysts, or tuberculous or fungus infections are excluded.

Fifty-five patients treated in large teaching hospitals in the Minneapolis area in the years 1952 through 1956 met these criteria and are the basis of the present analysis.

An adequate trial of medical therapy was given to fifty-one patients and was considered successful in twenty-eight. Treatment consists of appropriate antibiotic therapy. adequate bronchial drainage and general supportive measures. Early bronchoscopy is recommended for appropriate bacteriological and cytological studies, also assisting in the identification of local bronchial disease which might prevent a successful result of medical treatment, such as neoplasm, inflammatory stenosis, or endobronchial suppuration.

The major cause of medical failure was inadequate bacteriological examination leading to improper antibiotic therapy. Lack of satisfactory progress on appropriate medical management in one month was considered indication for surgical therapy.

Continued



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CME-

External drainage is now rarely indicated for primary lung abscess except in the extremely poor risk patient. All of the five patients treated by external drainage in this series had unsatisfactory results while all but two of eleven patients treated by resection had good results.

The current review of lung abscess again emphasizes that modern medical methodology, inappropriately applied, results in no miracles. On the other hand, recognition of and adherences to the principles of management described by Dr. Fifer and his associates will result in the most favorable course in management of localized pulmonary suppurative disease.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Primary Lung Abscess" Fifer, W. R., Husebye, K., Chedister, C., and Miller, M. Archives Internal Medicine 107:668, May, 1961.

CARCINOMA OF THE RIGHT COLON

In this study the authors appraise the effect of obstruction in resectable carcinomas of the right colon. The less common occurrence of obstruction on the right side as compared to the left has been previously shown by others. Apparently this is due to the relative rarity of annularity on the right side. However, the factors of a larger bowel lumen, more fluid contents, and a frequently incompetent ileocecal valve also contribute to the lower incidenec of right-sided obstruction.

The experience of the Mayo Clinic for the years 1910 through 1943 yielded twenty examples of completely obstructing carcinomas of the right colon which could be resected with hope of cure, all of whom survived the initial period of operative mortality. This series was compared with a group of fifty-three patients with similar lesions causing partial obstruction and seventy-three patients with non-obstructing lesions.

The growths causing complete obstruction tended to be small ones, and more commonly situated near the hepatic flexure. They were usually annular ulcerating lesions which seemed disposed to early local penetration and lymphatic invasion. The treatment for all patients was right hemicolectomy. Sixteen of the twenty patients with complete obstruction required preliminary decompressive procedures.

Five year survival rates disclose the poorest prognosis for patients with complete obstruction. It is suggested that edema and hyperperistalsis associated with obstruction cause dissemination along lymphatics and blood vessels, mainly by emobilization.

Although the common experience with neoplasms of the right colon would ordinarily imply a favorable prognosis, the onset of complete obstruction apparently indicates a very poor probability of cure, even though the lesion appears grossly locally confined. The earlier attention of patients to alterations in bowel habits or abdominal symptoms and the earlier and more frequent use of colon x-rays for such signs will permit appropriate therapy prior to the onset of obstruction with its proclivity for metastases.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"A Clinicopathological Study of Obstructing Carcinomas of the Right Portion of the Colon" Wilder, T. C., Dockerty, M. B., and Waugh, J. B. S. G. & O., 113:353, September, 1961.

PREVENTION OF THROMBOSIS

These authors studied experimental endarterectomies on dogs' vessels larger than 4.0 mm. by giving an intravenous infusion of 50,000 units of plasmin (fibrinolysin) diluted to 200 cc. with 5% dextrose given over a two-hour period. This infusion is repeated the second and fourth postoperative days. On the fourteenth day the vessels were exposed and patency determined. No other anticoagulants were employed.

Two groups of dogs were studies, one with 41 arteries receiving fibrinolysin; the control group of 39 arteries received no drug. Of the experimental group, 65.8 per cent of the vessels remained open while in the control group only 33.3 per cent remained open.

Side reactions of chills were very commonly noted during the infusion. The authors believe that fibrinolysin also has some basic effect on the healing process of tissues and that this may give some concern. However, they demonstrated the fibrinolysin experiment strongly suggests that it is effective and that the drug offers great promise.

These studies add to the material appearing favoring a definite efficacy of fibrinolysin to prevent thrombosis. This drug, however, cannot be at this point fully evaluated for routine clinical use. Additional study is necessary to evaluate side reactions and the exact areas of clinical utility.

J. H. Strickler, M.D.
Minneapolis, Minnesota

"Prevention of Arterial Thrombosis Following Experimental Endarterectomy with Plasmin (Fibrinolysin)" Norman L. Whitman, M.D., Theodore Shohl, M.D. and Wiley F. Barker, M.D.; Ann. Surg. 153:533, April, 1961.

ICE WATER TREATMENT OF BURNS

Shulman reports experience with 150 burn patients in which he recommends ice water immersion or the application of an ice cold compress as the immediate treatment in burns of all degrees involving less than 20 percent of the total body surface.

He found that those who were treated initially with ice water did better than those who were not.

Most of the burns were first and second degree, but in some cases elements of third degree burn were represented.

The burned area is immersed in a vessel of cold water containing ice cubes or in areas about the head and neck where this is not possible, towels kept in buckets of water were used as compresses. The cold treatment was continued until it was possible to discontinue the treatment without return of the pain. When the patient experienced return of pain, the cold packs were renewed.

The relief of pain is usually always immediate. The time factor between injury and treatment is directly related to the result; hence the ice water treatment should be instituted by the patient himself or by the one who administers first aid.

After the initial ice water treatment, any type of treatment could be recommended, either the dry treatment or treatment with compressed vaseline dressings.

J. H. Strickler, M.D.
Minneapolis, Minnesota

Shulman, Alex G.: "Ice Water as a Primary Treatment of Burns." J.A.M.A. 173:1916-1919, 1960.

End

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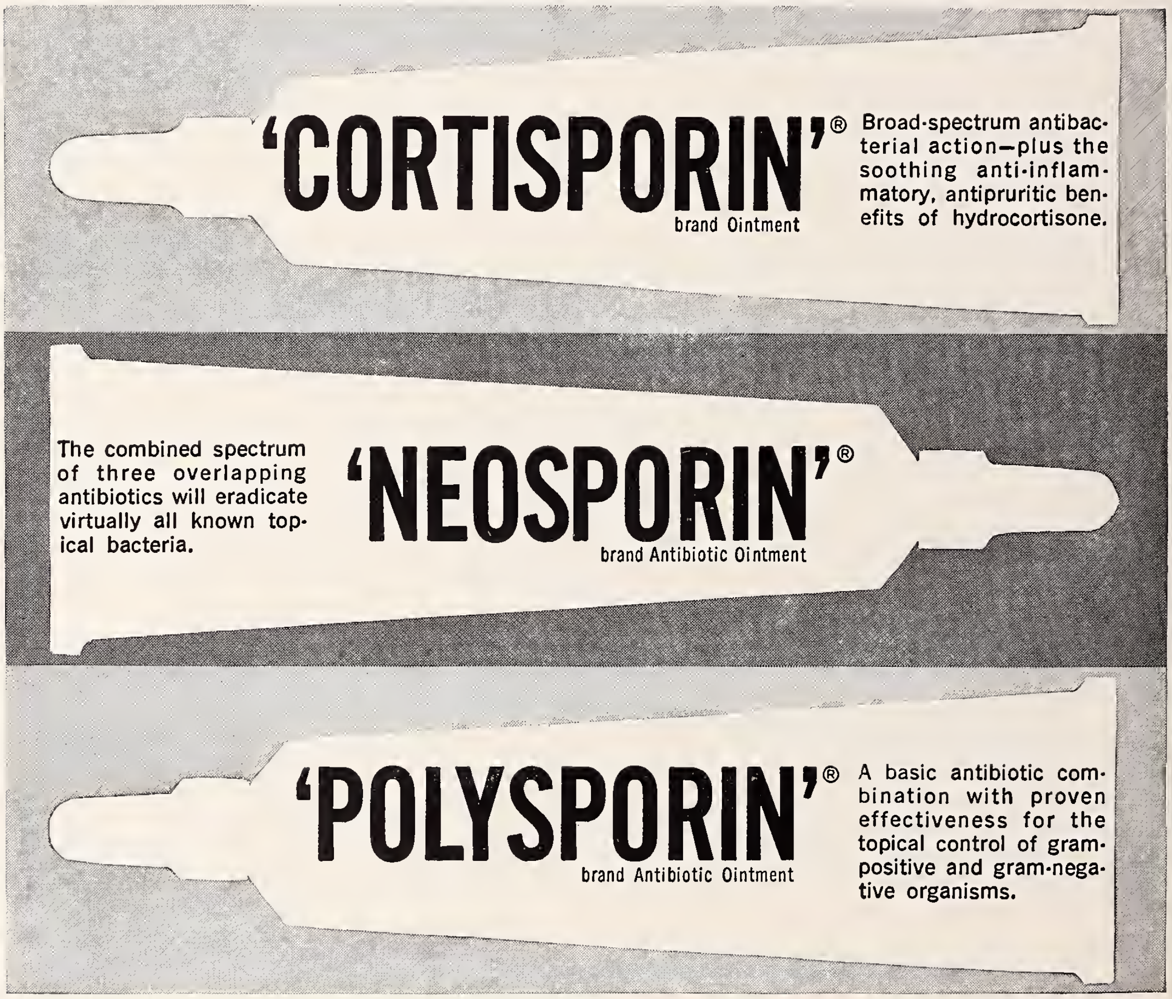

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Phenacetin	97 mg.	Hyoscyamine sulfate	0.016 mg.
		Phenobarbital (⅛ gr.)	8.1 mg.

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References: 1. Carpenter, E. B.: South. M. J. 51:627, 1958. 2. Hudgins, A. P.: Clin. Med. 8:243, 1961. 3. Lamphier, T. A.: J. Abdomin. Surg. 3:55, 1961. 4. Levine, I. M.: Med. Clin. N. America 45:1017, 1961. 5. Meyers, G. B., and Urbach, J. R.: Penna. M. J. 64:876, 1961. 6. Perchuk, E., Weinreb, M., and Aksu, A.: Angiology 12:102, 1961. 7. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 8. Schaubel, H. J.: Orthopedics 1:274, 1959. 9. Steigmann, F.: Am. J. Nursing 61:49, 1961.

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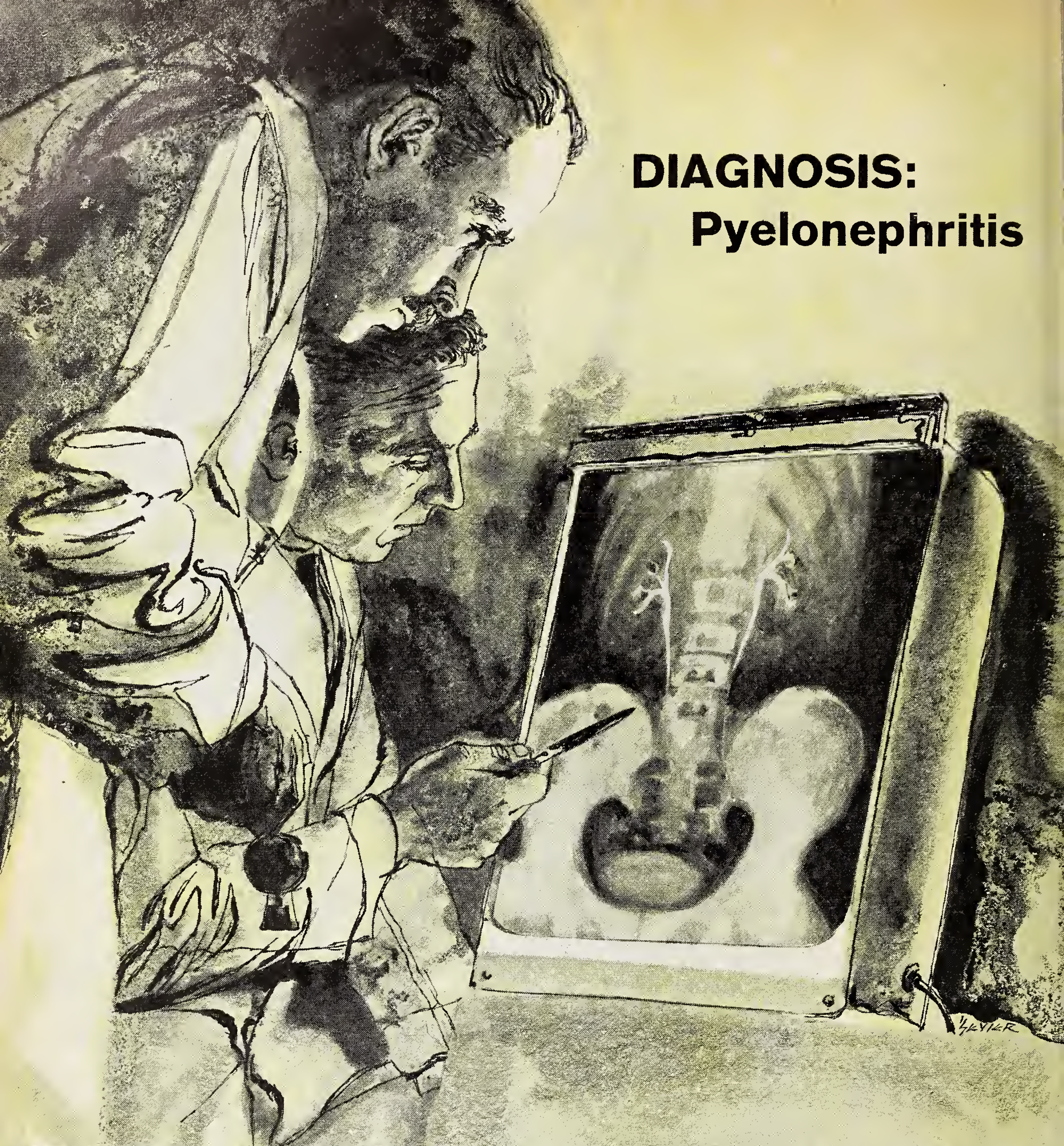

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Book Reviews

THE CHANGING YEARS — Madeline Gray — Doubleday & Co., Inc. 249 pages. Price: $.95.

This book is written primarily for the woman who wants information or needs reassurance before, during, or after menopause in order to deal with her questions and problems, her doubts and fears, her symptoms and disturbances.

By way of specific information the author first explains woman's distinctive physiology as it involves her glandular system. Next she describes the hormones, estrogen and androgen: their operation and function as regulators and the efficacy of supplementing either or both by pill, pellet, injection, cream or suppository, always, however, on the advice and under the direction of a doctor.

Perhaps the most valuable words the author has to offer to any woman during her "change of life" are: "Time and nature are on your side." Patience and common sense can do a great deal in orienting and adjusting a woman; if they are not sufficient or if symptoms become serious or last too long, a woman is urged to consult her doctor for guidance and treatment.

Mrs. Gray does a thorough job of 'debunking' a host of strange but familiar and persistent misconceptions and superstitions, thereby minimizing their unfortunate impact on credulous and worried women. She also deals tactfully and sympathetically with various unwarranted fears that plague some women, such as: "Will I lose my figure and my sex appeal?" and "Will my husband stop loving me and start to roam?"

The book is written in a bright, chatty style, calculated to appeal to the average woman to whom it is directed.

Carl O. Rice, M. D.
Minneapolis, Minnesota

SOMATIC STABILITY IN THE NEWLY BORN (A Ciba Foundation Symposium), edited by G. E. W. Wolstenholme and Maeve O'Connor, Little Brown and Company, Boston, 1961, price $10.00.

This book contains the papers given and comments made at a Ciba Foundation Symposium on "Somatic Stability in the Newly Born" held in January, 1961. The many papers present a multidisciplinary approach to the gestational and post-gestational factors that produce injury, congenital anomalies, well being, death or survival in the newly born. This book, deliberately limited to a narrow problem, should be of interest to obstetricians, pediatricians, general practitioners, and to veterinarians. There are few in these specialties who would not gain pleasure and profit from an evening's perusal of this book.

Such limitations as the book has are inherent in its virtues. It is an up-to-date presentation of research and available knowledge, and may therefore contain statements of fact that will be changed as further progress is made. It will aid in the reader's understanding of the problems of care of the newborn, but instead of providing solutions will probably stimulate thought and subsequent investigations.

Carl O. Rice, M. D.
Minneapolis, Minn.

INSTRUCTIONAL COURSE LECTURES, Fred C. Reynolds, M. D. C. V. Mosby Company, St. Louis, Missouri, Price $17.00 pp 310, Vol. 18.

This volume represents a series of lectures on orthopedic problems. It is composed of five parts dealing with the spine, a few fractures of the lower extremities, some of the common orthopedic problems in children, the surgical aspects of the blood supply of the bone, and a few miscellaneous problems in orthopedics.

The book is well constructed. The type faces, headings, and sub-headings are properly delineated, making it possible to review the manuscript with the greatest economy of time, and to search for desired pertinent data without reading that which is not pertinent.

Line drawings are used freely and are very satisfactory in illustrating details which otherwise would require a great deal of verbiage. This volume could be profitably owned by any surgeon, orthopedist, or general practitioner who desires to stay abreast of the times in many of the commonly encountered orthopedic problems.

Carl O. Rice, M. D.
Minneapolis, Minn.

STROKE — Douglas Ritchie. Doubleday & Co., New York 1961. 192 pages. Price: $3.50.

A medical summary of these 192 pages of personal history might say: A fifty year old male radio announcer was admitted to Hospital May 7, 1955, unconscious. He was known to have had hypertension for six years. Physical examination revealed an unconscious man with a right hemiplegia. He recovered consciousness in a few days and was then aphasic with permanent hemiplegia. Fitted with a walking caliper and after considerable physiotherapy, he was ambulated but his aphasia remained nearly complete.

Although the pertinent medical facts can be laid down in a half a dozen lines nevertheless it is important to the physician to listen to the words of an articulate, possibly a verbose man writing what more accurately could be titled "A visceral history of a cerebral accident." The book records the emotional impact of paralysis felling a man in his prime and aphasia striking a professional speaker. Although he could not communicate still he understood very well what was going on around him. And the kindly nurse who confused the aphasia of cerebral thrombosis with infantile inarticulation so that she talked to Mr. Ritchie only in baby talk became the object of his daily frustrated rage. Ritchie is a man of courage who has rehabilitated himself admirably. He sets an example for others similarly afflicted.

Reuben Berman, M. D.
Minneapolis, Minnesota

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Minnesota State Medical Association

109th Annual Meeting

A number of important actions were taken by delegates attending the 109th Annual Meeting of the Minnesota State Medical Association May 21, 22, and 23 in Minneapolis. Many of the major actions taken at the closing session of the House of Delegates were those based on the recommendation of Reference Committee reports.

The delegates unanimously passed a resolution expressing comprehensive opposition to the King-Anderson Bill. The resolution adopted was a substitute for several similar resolutions submitted to the House. It asserted that the primary interest of the physicians of Minnesota has always been to insure the health and well being of all people regardless of their age, financial resources or other circumstances of life. The resolution also noted the rapid growth of voluntary insurance programs, the widening implementation of the Kerr-Mills Law, and the steady improvement in local and state assistance programs are strong influences already at work in solving the problems of our older persons.

According to the resolution "thorough study of the King-Anderson Bill and similar proposals to establish a Federal system of hospitals and nursing home care for certain segments of our popu-

Continued

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lation regardless of need," conclusively demonstrates that such a system is unnecessary, inordinately expensive, and destructive of that professional and human liberty which is the essence of our unsurpassed American achievement in medical care.

King-Anderson "Manifestly Unjust"

The resolution described as "manifestly unjust" a system which forces the people of America to directly subsidize hospitals and nursing home care for any group of citizens whether they need it or not, whether they want it or not.

The resolution made clear the position of the state association as follows: By commending the Blue Shield and Blue Cross organizations and the voluntary health insurance carriers for their success in developing programs to cover the medical and hospital needs of those persons over 65 and urging such organizations to continue and improve such programs.

By reaffirming the long-standing practice on the part of physicians to provide at all times needed medical care to all persons;

By assuring the people of the State of Minnesota that its members will continue to furnish to the citizens of the State of Minnesota needed medical care;

By again urging the legislature to enact at its 1963 session legislation implementing the Kerr-Mills Bill.

Relative Value Study Approved

A resolution approving the adoption and publication of a minimum relative value study was passed. The minimum relative value study is based on the 1960 California Relative Value Study except for unit values for therapeutic radiology to be proposed by the Minnesota Radiology Society. The resolution expressly states that the Minnesota Relative Value Study will in no way affect the responsibility of the individual physician for the determination of just and proper fees. It also points out that acceptance of the Minnesota Relative Value Study by individual physicians is entirely voluntary and optional.

The resolution also directed the Committee on Medical Services to continue to conduct studies of the entire matter in order that the Minesota Study can continue to reflect current practices by the medical profession in Minnesota.

Osteopathy Resolution Adopted

The delegates adopted a resolution authorizing the Medical Section of the Governor's Liaison Committee on Osteopathy to proceed with the effort to work out on a cooperative basis a statute which would embody the removal of restrictions on osteopathic practice with the specific understanding that the ostepathic schools will be inspected by the Minnesota Board of Medical Examiners and that licensure will be in the hands of a combined board, which includes representative osteopathic physicians on the board.

The resolution also provided for the presentation of the proposed statute to the Minnesota State Medical Association for approval. The resolution dealing with osteopathy recalled the following statement adopted by the Minnesota State Medical Association November 27, 1957: "The Minnesota State Medical Association believes that a group should not be permitted to practice medicine and surgery unless and until such group proves to the satisfaction of the Minnesota State Board of Medical Examiners that:

1. It believes in the scientific approach toward medicine and does not follow any dogma or tenet, and
2. Its education is as good as that given by medical schools.

It also recalled that in 1958 the American Osteopathic Association removed the name of Andrew Taylor Still from its constitution. The resolution also pointed out that at its May, 1962 meeting the Minnesota Osteopathic Association passed a resolution accepting the principles of a combined State Board of Medical Examiners empowered to inspect osteopathic colleges applying for approval.

Qualified Psychiatrists Urged For State Mental Hospitals

Approved by the delegates was a resolution which urged a revision of the state law so that the responsibility for the care of patients in the state mental hospitals be vested in a qualified psychiatrist as administrator and chief medical officer with total responsibility and adequate remuneration.

The action was taken as the result of legislation passed by the Minnesota State Legislature

Continued

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in 1961 which placed administrative responsibility in the hands of lay administrators which is not in the best interest of total patient care in the Minnesota state mental hospitals. The resolution noted that this legislation was enacted against the advice and over the opposition of the Minnesota State Medical Association and a competent scientific society, the Minnesota State Psychiatric Society. It also stated that the total rehabilitation of the patient in our state mental hospitals is contingent upon adequate medical, psychiatric and environmental care.

The resolution also blamed the present law for the significant number of "our most able and competent psychiatrists who have resigned from the state mental hospitals because of untenable administrative situations."

Dues Increase Noted

Reports of the Chairman of the Council, the Treasurer, and the Finance Committee were unanimously accepted upon the recommendation of the Reference Committee on Officers and Councilors reports. Each of these reports emphasized the recent increase in expenses of the Minnesota State Medical Association. The report also stressed the need to either reduce expenses or to find additional annual revenues. The three reports outlined the principal areas of increasing expenditures. No objections or questions were voiced by delegates. Following a brief discussion about the mechanics of procedure it was moved by Doctor O. L. N. Nelson of Minneapolis, and duly seconded that the Minnesota State Medical Association dues be raised by $20.00 a year for a total of $75.00 to be paid annually by the members of the Association in addition to American Medical Association and local society dues. The original motion offered by Dr. Nelson was adopted without a dissenting vote upon recommendation of the Reference Committee on Medical Education reports.

Contact Sports Safety Measures Endorsed

The House adopted a series of suggestions for the greater safety of students engaged in athletics, particularly contact sports. All of the suggestions urged closer medical supervision for school athletics, including physical examinations for high school athletes as well as providing adequate training and conditioning to prepare for all contact sports.

The Committee recommended that a note clarifying the eligibility requirements for patients who need help paying for drugs for the prevention of rheumatic fever should be added to the prescription forms used for the program. Another Committee recommendation adopted was one which changed the name of the Committee on Maternal Health to the "Committee on Obstetrics, Gynecology, and Maternal Health."

Miscellaneous Actions Taken

Among other recommendations adopted on suggestion of various reference committees were the following:

That the resolution adopted on administrators of state mental hospitals as recommended by the Resolutions Committee be endorsed; that the Pre-School Vision and Hearing Survey conducted under auspices of the Committee on Ophthalmology and the Committee on Conservation of Hearing be commended for excellent work, noting that this is the first undertaking of its kind by doctors of medicine in the entire United States; that the Committee on Physicians Assistance be commended also for its fine work; and also that a vote of commendation be given to the Woman's Auxiliary for its contribution to the public relations of medicine.

The question of a time schedule for resolutions submitted for action by the House of Delegates was generally discussed. It was agreed in general, with the Resolutions Committee that all resolutions, if at all possible, be submitted at least 30 days before House sessions to give time for study and consultation with legal counsel in some instances. The Resolutions Committee recommended initially that late resolutions should have unanimous approval of the House of Delegates before they are admitted for consideration by the appropriate reference committee; and that those who are entitled to submit resolutions should be limited to county societies, the Council, or members of the House of Delegates. The recommendation was extensively discussed. It was proposed from the floor that the recommendation of the Resolutions Committee be amended to allow special societies to submit resolutions also. This amendment was adopted after considerable discussion. The proposal was made, with respect to the admittance of late resolutions, that a formula should be worked out by the Permanent Evaluation Committee. This proposal was discussed at length, also, and it was eventu-

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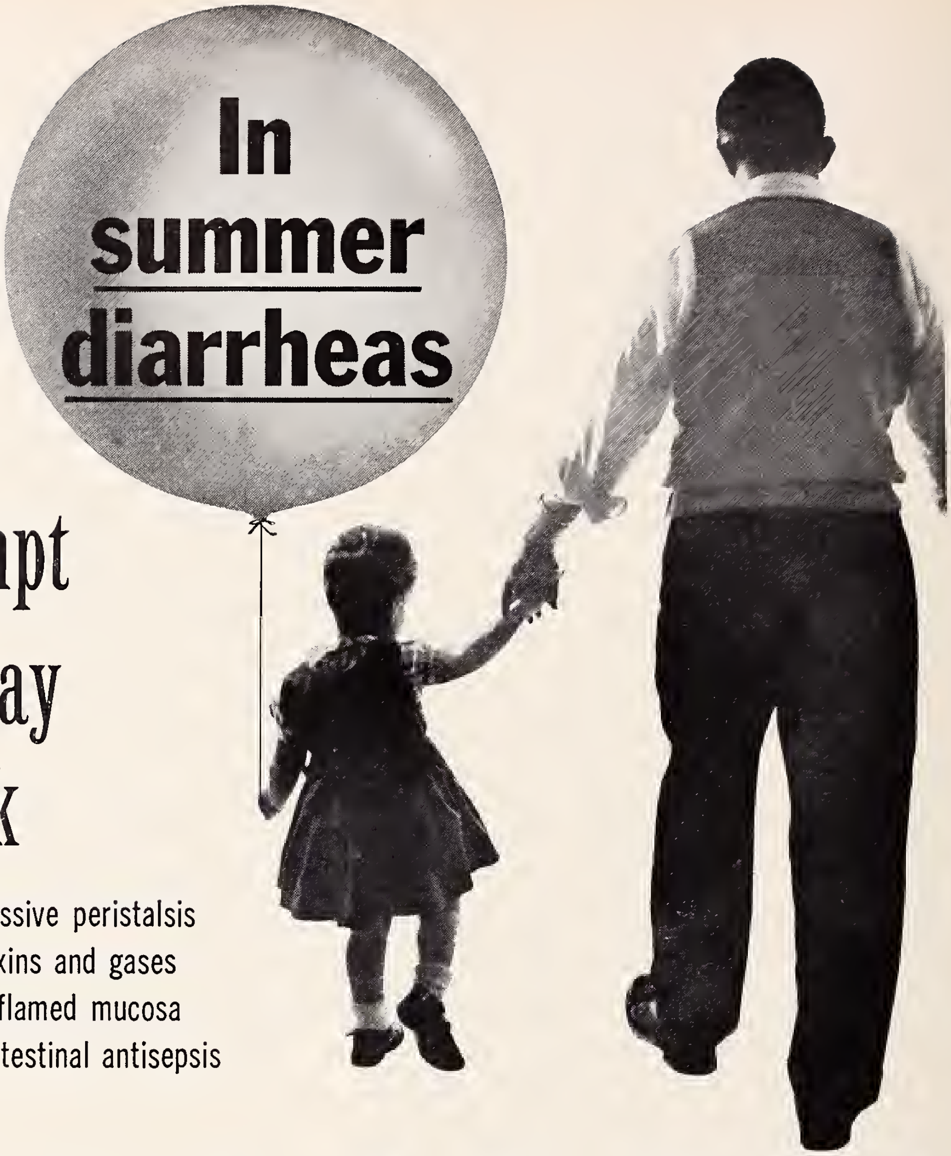

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ally decided on unanimous action to refer the question to the Permanent Evaluation Committee.

New Officers Elected

The following officers were elected for the coming year: Chairman of the Council Donald McCarthy was chosen President-Elect of the Minnesota State Medical Association at the final session of the House of Delegates. Dr. McCarthy, a retired U. S. Navy Captain, has been with the Veterans Administration since 1946 and in his present capacity as Director of Professional Services at Fort Snelling, he serves as supervisor of Professional Activities in eight north central states and the upper peninsula of Michigan. Dr. McCarthy also is an Associate Professor in Clinical Medicine at the University of Minnesota School of Medicine, a Fellow of the American College of Physicians, a member of the Minnesota Academy of Medicine, the Minneapolis Academy of Medicine, the Hennepin County Medical Society, Minnesota State Medical Association, and the American Medical Association. Dr. McCarthy will take office in January, 1963.

Other physicians chosen officers of the Association include: Dr. B. J. McGroarty, St. Paul, re-elected Secretary; Dr. Karl W. Anderson, Minneapolis, re-elected Treasurer; Dr. John T. Pewters, re-elected Vice Speaker of the House of Delegates; and Dr. O. L. N. Nelson, Minneapolis, who was chosen to fill Dr. McCarthy's present post as Councilor from the Sixth District.

Dr. Wilford J. Deweese, Bemidji, was elected First Vice President; Dr. John W. Gridley, Arlington, Second Vice President; Dr. John L. Falls, Red Wing, re-elected Speaker of the House of Delegates; Dr. William E. Wellman, Rochester, Councilor, First District; Dr. Walter B. Wells, Jackson, Councilor, Second District; and Dr. R. P. Buckley, Duluth Councilor, Ninth District.

Dr. Arnold O. Swenson, Duluth and Dr. J. Minott Stickney, Rochester were re-elected as Delegates to the American Medical Association. Dr. Clarence Jacobson, Chisholm, and Dr. R. H. Wilson, Winona, retained their posts as alternate delegates.

Dr. Robert P. Buckley of Duluth was named Chairman of the Council to replace Dr. McCarthy.

The House of Delegates accepted the invitation of Zumbro Valley physicians to hold the Association's 1964 meeting in Rochester. The 1963 meeting will be held in Duluth.

Fifty Clubbers Feted

Seventeen Minnesota physicians who practiced medicine in Minnesota for 50 years received special citations and awards at the 109th Annual Banquet of the Minnesota State Medical Association at the Leamington Hotel.

Recipients of the Fifty-year Service Citation in 1962 included Doctors William L. Benedict, Rochester; Harry Klein and Murdoch A. Nicholson, Duluth; Otto J. Seifert, New Ulm; Clyde E. Wilson, Blue Earth; Warner G. Workman, Tracy, and Charles A. Williams, Seattle, Washington, formerly of Pipestone.

Minneapolis physicians: Arthur F. Bratrud, John A. Dahl, Ralph T. Knight, Frank S. McKinney, Henry E. Michelson, Thomas A. Peppard, Carl W. Waldron, and former Minneapolitan Ellery DeW. Simpson, now of Ashville, North Carolina.

St. Paul physicians: Carl B. Drake and George W. Snyder. These doctors among them have provided a total of over 850 years of medical service.

Distinguished Service Award Winner

Recipient of the 1962 Distinguished Service Award was Doctor Chester L. Oppegaard, of Crookston. Presenting the medal and certificate to Dr. Oppegaard at the Association's Annual Dinner was Dr. Donald McCarthy, President-elect of the Minnesota State Medical Association. Dr. Oppegaard is an immediate past president of the MSMA and had previously served eight years as chairman of the council.

Rural Medical Scholarship Presented

Charles Ira Benjamin, 23, of Hutchinson, Minnesota, and Elton Glenn Wing, 22, of Jackson, Minnesota, were chosen by the Scholarship and Loans Committee to be recipients of the 1961-62 Rural Medical Scholarship. The awarding of two scholarships instead of the customary single scholarship was made possible through a repayment to the loan fund.

Mr. Wing is single, Mr. Benjamin is married and has two children. Both have excellent grades for their first year in medical school, and both have outstanding records of community service and activities. It is believed that they will be valuable additions to the practice of medicine in rural Minnesota.

End

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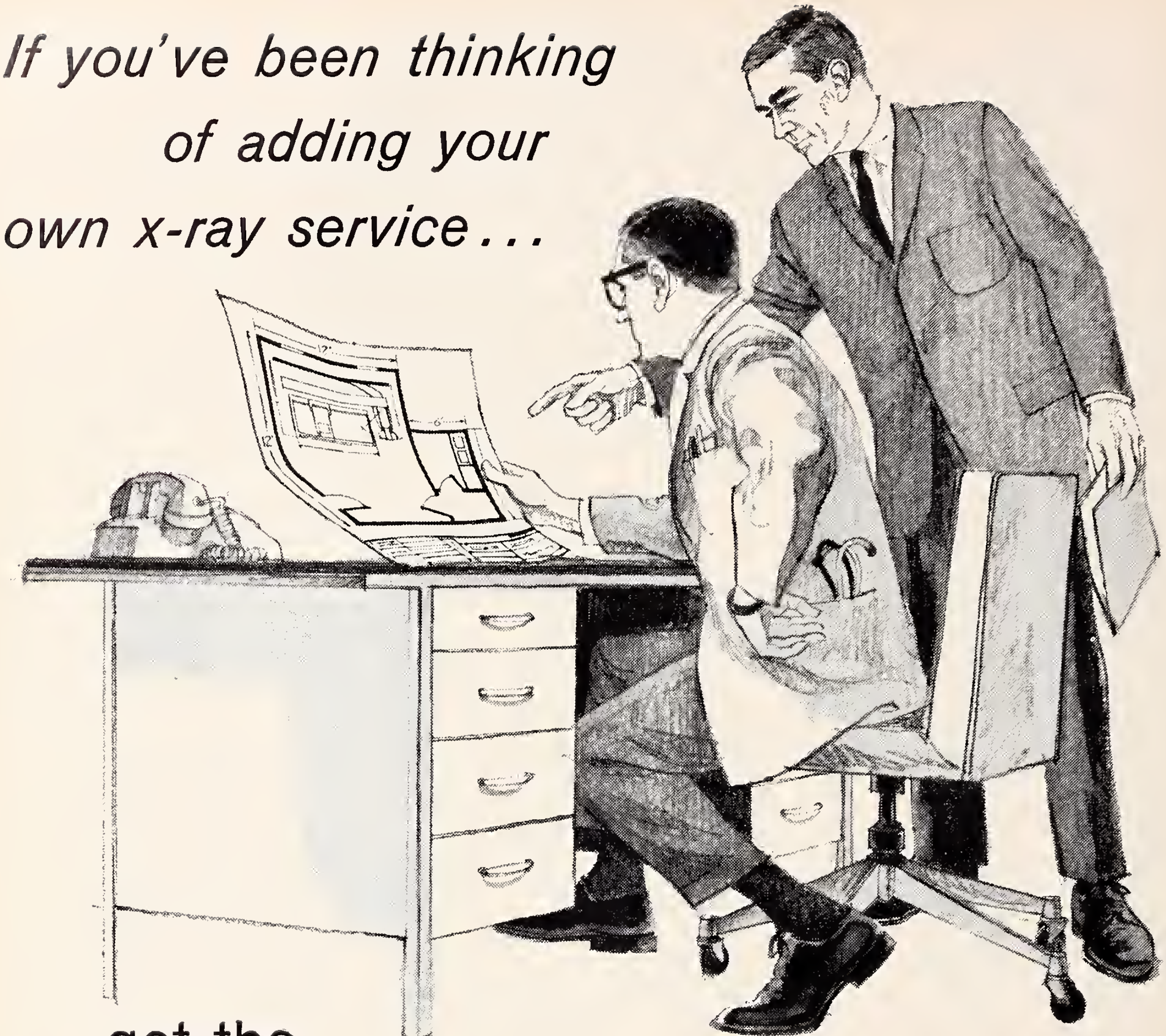

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Medical Economics

Minnesota Editors View Kennedy Eldercare Plan with Concern

How do editors of our smaller newspapers view the Administration's "big push" to enact the King Anderson Bill? A recent editorial in the **Twin Valley Times** entitled "Antipathy Toward Welfarism" sums it up this way:

"Keep government out of education . . . Keep presidential power to a minimum . . . Get out of socialization!

"That sums up the view of an overwhelming majority of the editors of the nation's smaller newspapers, as revealed in a survey recently conducted by the **American Press.** Typical of the general antipathy of editors toward the whole idea of 'welfarism' is perhaps the best exemplified in the matter of proposals to increase social security payments to help provide for the hospital needs of people over 65 years of age. Seventy-eight per cent of the editors were opposed to further government intervention. By contrast, 84 per cent of the editors expressed preference for a voluntary non-governmental plan to meet the medical needs of the aged — such as is now being completed by the Blue Shield, Blue Cross, and the American Medical Association.

"Judging by the comments of many of the editors as quoted by **American Press,** expansion of government in the medical care field was opposed for the same reason that editors oppose government interference in other fields — a deep and abiding fear of big government and socialism.

"Editors are a highly individualistic lot. The fact that they are near-unanimous in opposition to government medicine, is reason enough to take another look at this particular bureaucratic pill before swallowing it."

Opponents Ask "Who Paid for Medicare Rallies?"

"Who spent the money to finance that nationwide series of senior citizen rallies Sunday, addressed by President Kennedy in New York and designed to build up enthusiasm for the administration's King-Anderson social security medicare bill?

"Opponents said this week the rallies cost someone barrels of cash for the literature distributed at each, the imported speakers, the elaborate preliminary arrangements and they demanded to know from where the money came.

"Said one suburban physician: 'This was a massive propaganda effort, organized on a nationwide scale to whip up enthusiasm for the Kennedy brand of medicare and give the impression of a popular uprising of public opinion. Actually the only real enthusiasm for King-Anderson is in the power-hungry ranks of the administration. This is a 'groundswell' that started from the top down . . . backed by someone's millions.

" 'Where did that money come from? Was part of it tax money? Was some of it union dues . . . paid in good faith by honest workmen?'

"No one, . . . seemed able to supply the answers.

" . . . In theory, the rallies were sponsored by the National Council of Senior Citizens . . . a new organization headed by former congressman

Continued

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A. J. Forand of Rhode Island whose comparable bill was defeated a year ago. But the support of DFL party workers (a half dozen spoke at the rally) and the endorsement of the state's labor leaders left no doubt the Council had received outside assistance in substantial amount."

Lake Harriet Courier

Kennedy's Rally Had Little New

"President Kennedy has pitted his enormous personal popularity against the opponents of the King-Anderson Bill, with Congress as the target. In his Madison Square Garden appearance the President gave his elderly audience the impression that the opposition is solely from the American Medical Association.

"As a public relations gesture, the rally (and about 30 others conducted throughout the nation) must be acknowledged as a success. As for increasing the nation's information about the controversial issue, the mass meeting must be considered a failure. There were many witty sallies, but nothing approaching solid information seems to have emerged.

"In fact, it seems to this newspaper that Mr. President missed a good opportunity for explaining the mechanics of the measure from which he promises so much. He did not, for instance, explain that under provision of his bill Kennedy the Elder would get some money toward the cost of his illness, but that the man felled by the heart attack just as the meeting was about to start would not.

"The President is also in error in believing that the American Medical Association is the only foe of the bill. In truth the AMA is a kind of Johnny-come-lately to the field. Many other people, in non-medical pursuits have opposed this bill and any like it for a good long time. From a purely humanitarian approach, the King-Anderson Bill is monstrous. It promises what it cannot deliver. It is only a token thing that treats some of the people. The others — whose need is real and visible — are not covered by this bill.

"This newspaper has watched the public debate for some time in complete amazement at the looseness of argument. It is probable that of the 17,000 people who were coaxed into Madison Square Garden, fewer than half would receive any kind of King-Anderson assistance. And of these, there would be only token help for short terms.

" . . . There is grave danger in relying on the popularity of a head of state to merchandise questionable legislation. There have been other popular leaders in recent history who used mass meetings to defeat critics."

Albert Lea Tribune

We frankly do not favor this type of government health care. Look at the experience we have had with social security. When this plan of retirement was instituted, it was to have been one or two percent of each employees weekly check. What has happened over the years—it has skyrocketed and the social security fund is still broke. The same thing will occur should the King-Anderson Bill become law. It would be an expensive program. Administrative costs would eventually amount to nearly as much as the medical.

The Medical Aid Fight

"There was a time when the family doctor was a man revered like a clergyman — a person to whom a family would go not only when physical trouble struck, but sometimes when there were other troubles, too.

"The medical doctor was the man in whom one confided without reservation, who was called at any time of night or day, and who gave unstintedly of his time to the people he served.

"That time has not passed, but we fear that if the people of the U. S. listen to the present national administration, the unselfish people of the medical profession will become, as a class, another group of citizens who are discredited by the same politicians who have for years and years made political hay by pitting neighbor against neighbor.

". . . Weekly we get 'releases' attacking the AMA —the American Medical Association. And just who is the AMA? Is it a big bogeyman we can't see? No, it is your family doctor. The fellow who stayed up all night to deliver your baby, or battled snowdrifts last winter when you needed him, or who, perhaps, saved your life by a delicate operation in a hospital.

"The AMA is your family doctor and thousands like him, banded together, across the United States.

"These politicians are attacking the doctors because they oppose the latest plan for medical aid to the aged proposed by President Kennedy. The politicians insinuate that the doctors are against medical aid to the aged, when in reality they are

Continued

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only against a program that is not fiscally sound, but is designed, in our opinion, to hasten the day when your family doctor becomes a government employee, working a seven or eight-hour day—and then we will have socialized medicine for certain.

"The point which is too often overlooked in the shuffle, and in the wide variety of arguments on this subject, is that we have a program inaugurated only in 1960, and this program certainly has not been given an adequate test. This program is the Kerr-Mills law, which provides federal support to all states which take advantage of its terms . . .

"The Kerr-Mills bill has not had a fair chance to do the job yet, and the disadvantages of the new medical care plan should certainly be avoided. If time proves the Kerr-Mills bill inadequate, then it can be amended, and changed, to meet the needs of the aged. That is the sensible, economical way to accomplish the goal."

The Clarissa Independent

Let's Not Mix Medicine With Politics

"Under consideration in Washington and most every state in the Union these days is the merit (if any) of a new Medicare plan being pushed by the administration known at the 'King-Anderson' bill . . .

"In recent weeks, we have been doing a lot of research on the subject and reading practically everything we can lay our hands on.

"Frankly speaking . . . we don't like what we've read about Medicare and the more we read —the more determined we are to fight this type of thing at every turn!

"You had better do some reading on the bill before you support it . . .or you might live to see the day you'll regret it in no uncertain terms.

"Here are just a few reasons why we oppose it: Passage of the bill will saddle us with new taxes such as we have never dreamed possible. If you earned around $5,000 last year . . . you'll pay 40 percent more taxes than you did last year! . . .

"One thing we should learn as Americans is that every time we send a dollar to Washington, we can't possibly get more than a little over half of it back because it costs money to implement and administrate every program handled in our nation's capitol.

"I'm not too thrilled about paying medical care for millions of folks now on social security who are worth a lot of money and can and are willing to pay their own way.

"I'm not at all excited about having the government's filing clerks and politicians share my physical ailments or tell me when and where I can be cared for or treated.

"I'm not at all interested in having surgery or other hospital treatment administered by a doctor who has never seen me before or knows nothing of my case. That's one time when faith in the man—not the government—is needed.

"I'm not happy about my government telling my doctor what pills or treatment he can prescribe for me or my family. That should be his right and privilege as a doctor!

"I'm not too sure that when the government starts telling doctors, newspapermen, lawyers, businessmen, and a lot of others how to conduct their work, we're going to hold still for it! That's the best way we can think of to kill private enterprise—which has made this country what it is today.

"*Of one thing we are sure!* We'll pay our share of taxes, but we also want to choose our own doctor!"

Buffalo Lake News

An Interesting Comparison

"We are greatly disturbed by the degrading, shabby image of America's senior citizens which has been treated during the past six months by the administration.

"Our elders have been held up to shame as poor, weak, sick and broke — pitiable wretches in this land of plenty . . .

"Locally the DFL has taken up the cudgel to make this also a state issue. Lt. Gov. Karl Rolvaag, as we recall, was quoted as saying the older folks shouldn't have to take a pauper's oath to receive medical care. . . .

"However, it is Sen. Donald Fraser who has taken on the role of champion for the Medicare program. In an ambitious lecture swing in which he debates members of the medical profession, Fraser has resorted to typical political nonsequiturs to support his party's plan . . .

" . . . And futhermore, we are intrigued by your statement of last week that 'Anyone who is really concerned about Federal spending would prefer the Kennedy plan which is self-financing, instead of the Republican plan, which requires even more government expenditures.'

" 'Self-financing' is indeed a smooth way, think we, of stating that the working people will pay for this government handout which is being promised to them.

Minnetonka Herald

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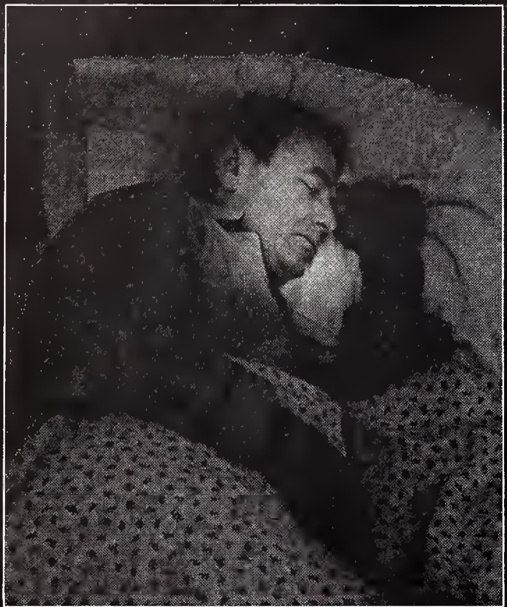

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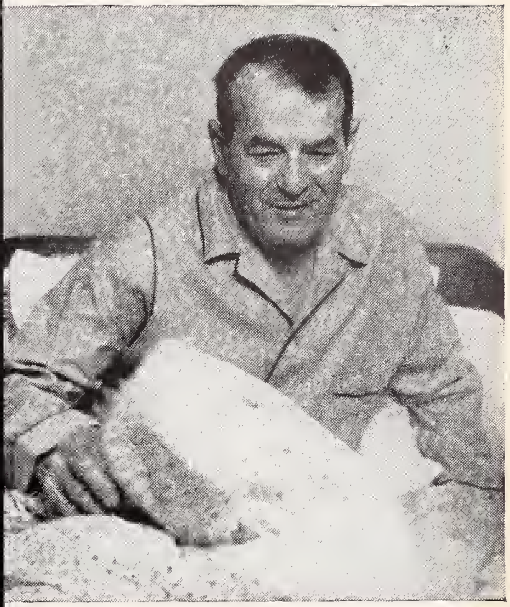

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Woman's Auxiliary

PAST PRESIDENT OFFERS THEORIES ON AUXILIARY WORK

One of the highlights of the Auxiliary's Annual Meeting on May 22 in Minneapolis was the Annual Report of the outgoing president, Mrs. W. A. (Thelma) Merritt of Rochester.

In her report emphasizing what has been done on the executive level of the auxiliary, Mrs. Merritt said that if she were asked to summarize the work of the auxiliary in the past year she would say "to establish good public relations by word and deed of individual members."

Throughout the many speaking engagements during her year as President, Mrs. Merritt said she stressed the need for auxiliaries to work in community service groups outside the medical profession, using the auxiliary as a schooling ground to keep members informed on medical legislation so that they would be prepared to clearly and decisively present the side of medicine to lay people.

Looking back on her year as President, Mrs. Merritt offered some personal theories concerning the work of the State Auxiliary. She said:

"1. I wish membership in a medical auxiliary could be put on a provisional basis, so each new member could be indoctrinated into the purpose of an auxiliary, its aims and functions; so belonging to a medical auxiliary would be a privilege, a place to be earned. We need well-trained, well-informed women to represent us in community service groups. Let the others be contributing members.

"2. I would like to see all auxiliaries share proportionately in the cost of a State Convention.

"3. I feel our budget should be flexible enough to meet the needs of each program as it changes from year to year and during the course of any one year.

"a. I wish we could have an account flexible enough to allow our legislation chairman expense money to speak to the auxiliaries needing first-hand help with legislative programs.

‘b. I wish some of the money we now have in a bank account could be offered for scholarships and loans.

"c. The budget could be pared of all token contributions with woman-service offered instead. This policy would have to be strictly adhered to or we would again accumulate a list of small contributions to pet causes. Woman-service is more meaningful than a small contribution to a philanthropic organization financially well-off; and we need to establish ourselves as a service organization.

"d. I feel we could dispense with our AMEF fund raising and let our husbands contribute to this medical cause as individuals. This is the new policy adopted by the Men's Association. The woman-service needed to collect these funds could put to use in service projects we sponsor.

"4. I would like to have a closer association between the State Auxiliary and the Auxiliary to the Student American Medical Association, again not monetary, but assistance in carrying out a program with them on the ‘Art of being a Physician's Wife.' They are the hope of the future for continuing our standards of service to the public, and they need our true friendship, out of which can come guidance.

"5. Lastly, I wish our ‘In Memoriam' service could be all-inclusive—for all doctors' wives in our state whether or not they are members of our auxiliary. This is a spiritual grace we can offer them and it should not be put on a paid-up dues basis. Such reverence for the dead has no place for exclusiveness."

These ideas offered the Auxiliary by Mrs. Merritt might be ones every member should consider.

AUXILIARY OFFICERS FOR 1962-63

President	Mrs. M. I. Hauge	Clarkfield
President-Elect	Mrs. Leo W. Fink	Minneapolis
First Vice-President	Mrs. Karl E. Johnson	Duluth
Third Vice-President	Mrs. F. G. Gunlaugson	Minneapolis
Fourth Vice-President	Mrs. Donald McCarthy	Ft. Snelling
Recording Secretary	Mrs. E. R. Hudec	Echo
Corresponding Secretary	Mrs. Norval Westby	Madison
Treasurer	Mrs. John H. Peterson	Duluth
Auditor	Mrs. G. R. Diessner	Rochester
Historian	Mrs. William P. Gjerde	Lake City
Parliamentarian	Mrs. M. F. Fellows	St. Paul

ADVISORY COMMITTEE:

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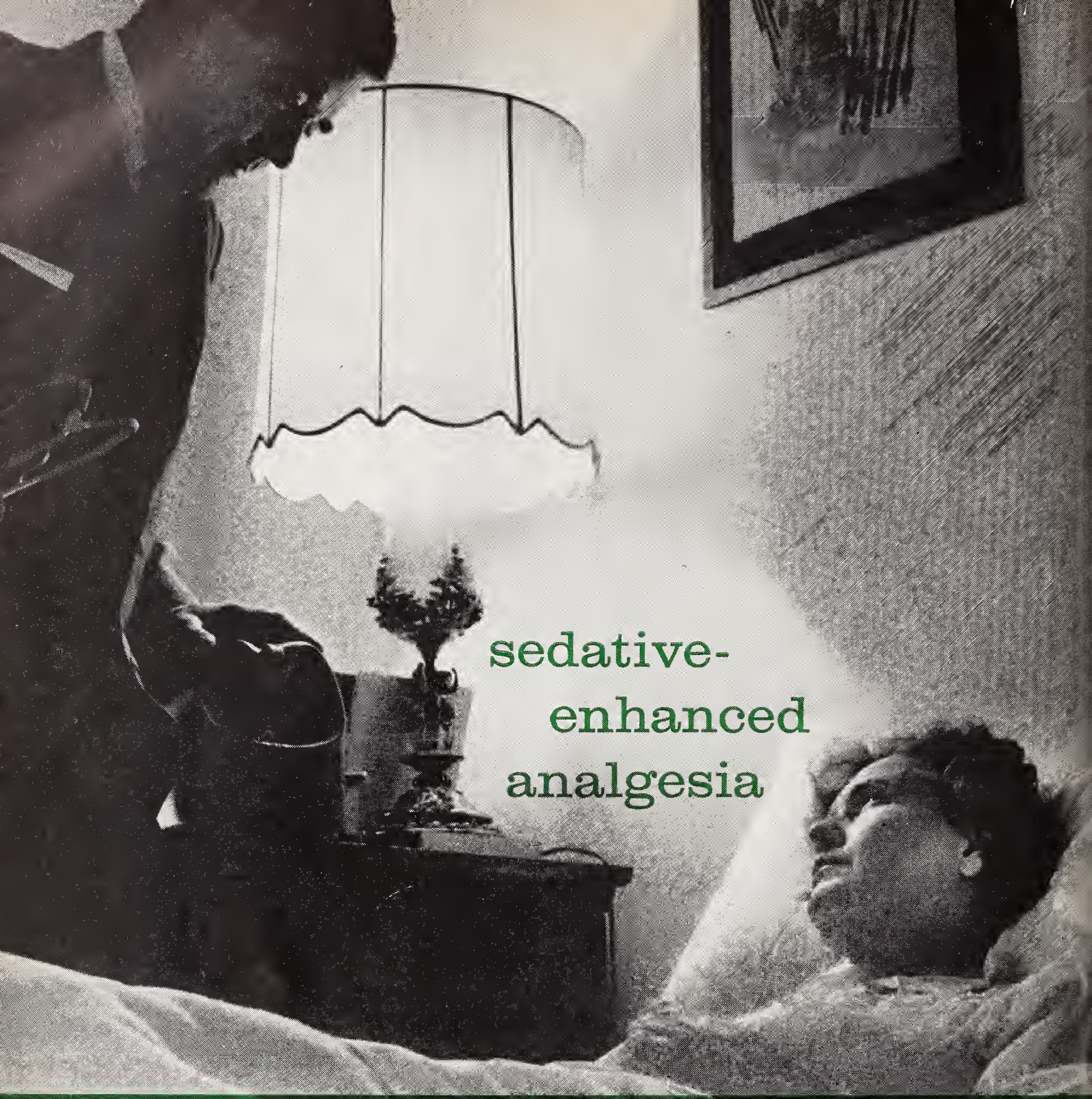
Mrs. W. A. Merritt	Rochester
Mrs. W. P. Gardner	St. Paul
Mrs. M. F. Fellows	Duluth
Mrs. Reuben F. Erickson	Minneapolis
Mrs. C. L. Oppegaard	Crookston

MEDICAL ADVISORY COMMITTEE:

Haddon M. Carryer, M. D.	Rochester
Donald McCarthy, M. D.	Ft. Snelling
P. E. Hermanson, M. D.	Hendricks
Harold W. Brunn	St. Paul

REGIONAL ADVISORS and STATE COMMITTEE CHAIRMAN have not been completely appointed.



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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

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Meetings and Announcements

JULY

University of Colorado School of Medicine Conference on "Dermatology for General Practitioners" July 19-21 in Denver, Colorado. Contact: the University. One other course on "Audiology" planned July 30-August 3 in Estes Park, Colorado.

American College of Chest Physicians postgraduate course "Cardiopulmonary Problems in Children," in Chicago, Edgewater Beach Hotel, July 23-27. Contact: Murray Kornfeld, Executive Director, Chicago.

Eighth International Cancer Congress July 22-28, in Moscow. Contact: American Tourist Bureau, 30 W. Washington St., Chicago.

Chicago Diabetes Association Summer Camp for diabetic children July 15-August 5, at Holiday Home, Lake Geneva, Wisconsin. Contact: Chicago Diabetes Association, 620 North Michigan Avenue, Chicago.

AUGUST

West Virginia State Medical Association 95th Annual Meeting, August 23-25 at the Greenbriar Hotel, White Sulphur Springs, West Virginia. Contact: Executive Secretary, West Virginia State Medical Association, Box 1031, Charleston 24, West Virginia.

University of Colorado School of Medicine Postgraduate Course on Pediatrics August 6-10, Estes Park, Colorado. Contact: The University.

Second National Northwest Summer Conference "The Special Child in Century 21" to be held in Seattle, August 28-September 1, at the Health Sciences Auditorium of the University of Washington. Contact: Jerome Hellmuth, 113 Madrona Place East, Seattle.

SEPTEMBER

Washington State Medical Association 73rd Annual Meeting in Spokane, September 16-19. Contact the W.S.M.A. in Seattle.

New York University Post-Graduate Medical School Course on Occupational Medicine, September 17-November 9. Write: NYU Post-Graduate Medical School, 550 First Avenue, New York.

University of Colorado School of Medicine Conferences on "Research Seminar on Fibrinolysis" September 17-19, and "Pulmonary Disease" September 24-28, in Denver. Contact the University.

American College of Chest Physicians postgraduate course "Recent Advances in Diagnosis and Treatment of Diseases of the Heart, September 17-21, Warwick Hotel, Philadelphia. Contact: Murray Kornfeld, Executive Director, Chicago.

University of Illinois College of Medicine, Department of Otolaryngology postgraduate course in Laryngology and Bronchoesophagology September 24-October 6. Contact: University, Chicago.

Methodist Hospital, St. Louis Park, Minnesota Symposium on Chest Diseases September 15. Contact: Jerome T. Grismer, M.D. at Methodist Hospital. Symposium has been approved by AAGP for seven hours credit, Category I.

Twelfth International Congress of Dermatology in Washington, D.C. September 9-15. Contact: Stephen T. Donohue, 420 Lexington Ave., New York.

ANNOUNCEMENTS

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

Junior and Senior medical students are invited to submit entries to the Annual Walter Reed Memorial Essay Competition of the Brooklyn Hospital. First prize $1,000. Closing date for entries will be March 1, 1963. Essays should be 5,000 to 10,000 words in length and submitted in triplicate. Contact: Abraham G. White, M.D., Brooklyn Hospital, Brooklyn, New York.

The Gillette State Hospital for Crippled Children has announced that simple cleft lip and palate surgery unaccompanied by additional orthopedic problems will not be attended at Gillette State Hospital.

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In Memoriam

ROBERT J. DELMORE

Dr. Robert Joseph Delmore, 44, died April 26 at Inglewood, California, of a recurrent coronary thrombosis.

Born in Roseau, Minnesota, Dr. Delmore graduated from the University of Minnesota Medical School and interned in Pittsburgh. After military service with the Army Medical Corps, he practiced medicine in Roseau until 1954. Later he was a member of a four-man orthopedic clinic in Inglewood.

Dr. Delmore was a member of the Minnesota and California State Medical Associations, the American Medical Association, the Western Orthopedic Association, Phi Rho Sigma medical fraternity, American Legion and the Elks Lodge of Inglewood.

He is survived by his wife, a daughter, and four sons.

ARTHUR JOHN LEWIS

Dr. Arthur John Lewis, 80, died March 3, at his home in Henning after a brief illness.

Dr. Lewis was born in Stevens Point, Wisconsin, and received his medical degree from Rush Medical College in Chicago. After a short practice in Deer Creek, Dr. Lewis moved to Henning and practiced medicine there for more than half a century.

He was a past president of the Park Region Medical Society and a 50 Club and life member of the Minnesota State Medical Association and the American Medical Association. He was on the Henning school board, a member of the Wesley Hospital staff of Wadena, president of the First National Bank of Henning, a member of Wadena Lodge No. 56, A. F. & A. M. Wadena Chapter 66 Royal Arch Masons, Wadena Commandery No. 29 Knights Templar, and of Zuhrah Shrine Temple, Minneapolis.

Surviving Dr. Lewis are his wife, one daughter, and four sons, two of whom are Dr. Wendell Lewis of Albert Lea and Dr. Charles Lewis of Henning.

EMIL G. NYLANDER

Doctor Emil G. Nylander, 69, a former resident of Dassel, died May 9 at Minneapolis following a two-months illness.

Dr. Nylander was born at Dassel and received his degree in medicine from the Chicago College of Medicine. He was a member of the Masonic Lodge and the Hennepin County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife and two daughters.

ROSEL T. SEASHORE

Dr. Rosel T. Seashore, 56, Duluth physician, died May 20, suddenly during the night.

He was born in Swea City, Iowa, graduated from the University of Minnesota medical school, and began the practice of medicine in Duluth in 1934. Following completion of military service, he returned to the medical school for two years special study of obstetrics and gynecology.

Dr. Seashore was a member of the St. Louis County Medical Society, the Minnesota State Medical Association, the American Medical Association, and the College of Obstetricians and Gynecologists.

He is survived by his wife and two daughters.

DAVID G. GARDINER

Dr. David Greth Gardiner, 67, former St. Paul surgeon, died May 31, in his home in St. Petersburg, Florida, following a lingering illness.

He was born at Knoxville, Tennessee, and received his degree from the Georgetown University, Washington, D.C. Dr. Gardiner practiced in St. Paul from the early 1920s until nine years ago when he went into government service, first with civil service and later with the veterans administration. While in St. Paul he served at various times as chief of staff at Ancker, Children's and St. Luke's hospitals. He formerly was a member of the Ramsey County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife.

LEON J. BULLOCK

Dr. Leon J. Bullock, 35, radiologist at Virginia Municipal Hospital and an associate of the East Range Clinic, was a victim May 25th, of a skin-diving mishap at Sand Lake, Virginia.

Dr. Bullock was born at Corning, New York, and graduated from the University of Rochester School of Medicine. He was a veteran of World War II; a member of the Virginia Lodge 264, Ancient Free and Accepted Masons; member of the Virginia Chamber of Commerce and on the board of directors of the local chapter of the American Red Cross.

He was a member of the Range Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife.

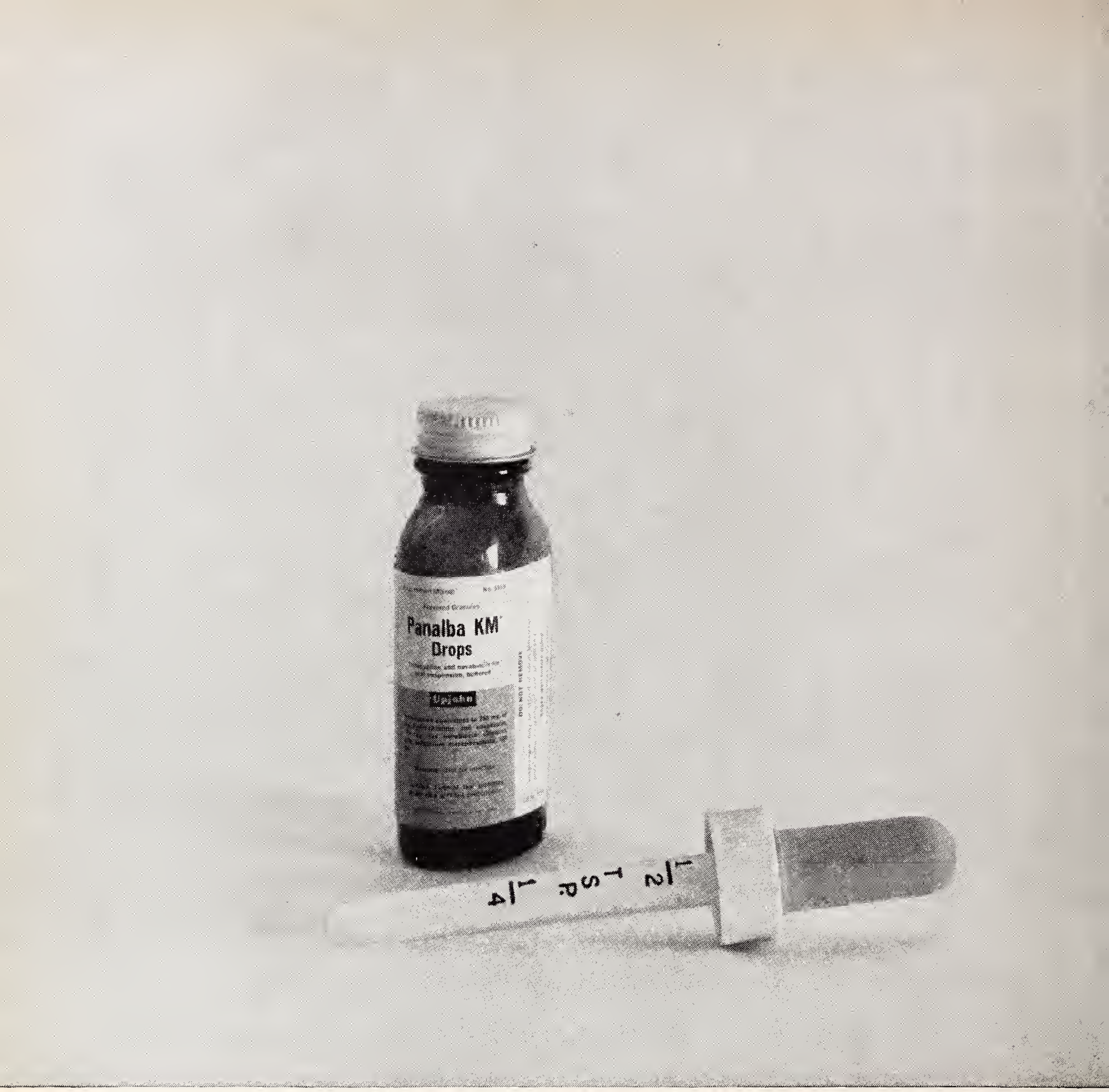
EMMETT A. HEIBERG

Dr. Emmett A. Heiberg, 66, Fergus Falls physician, died June 6, after a prolonged illness.

He was born at Rushford, Minnesota, and received his medical degree from the University of Minnesota. He went to Fergus Falls in 1927 to practice medicine where he organized the Estrem Clinic which since has become the Park Region Medical Center.

Dr. Heiberg was a fellow in the American College of Surgeons, a member of the Park Region Medical Society, the Minnesota State Medical Association and the American Medical Association. He was a past president of the Northern Minnesota Medical Association and past chief-of-staff of the Lake Region Hospital.

He is survived by his wife, two sons and a daughter.



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Physician's Diary

Dr. Benjamin Bofenkamp was recently elected vice president of the Minneapolis Chamber of Commerce.

* * *

Dr. R. E. Anderson of Willmar is retiring from the practice of medicine and surgery after 44 years, and will move to Marquette, Michigan.

* * *

Dr. Richard E. Payne, Virginia pediatrician, has returned from Africa where he has been engaged in medical work as a volunteer under the World Brotherhood Exchange at a mission station in Garoua-Boulai, Cameroun.

* * *

Dr. Roland Beckering of Edgerton and **Dr. John A. Spittell** of Rochester spoke at the Southwestern Minnesota Medical Society and Auxiliary Meeting held recently.

* * *

Dr. Donald B. Peterson of Anoka resigned as chairman of the Anoka County Red Cross to assume the superintendency of a hospital at Fulton, Missouri. **Dr. Matt K. Plasha** of Coon Rapids was elected as the new chairman.

* * *

Dr. William Carr of Minneapolis has been named by the St. Anthony Village Jaycees as the 1961-1962 winner of its Community Service award for his work as St. Anthony Village health and fire department doctor.

* * *

Dr. A. A. Bodaski has made a complete recovery from his recent illness and is back on full schedule at the Lake Benton Clinic.

* * *

Dr. Norval Westby of Madison and **Dr. B. H. Simons** of Prior Lake recently attended a four-day scientific meeting of the American Academy of General Practice in Las Vegas.

* * *

The newly elected officers of the Minnesota Radiological Society are: President—**Dr. Harry W. Mixer** of Minneapolis; Vice-President—**Dr. John R. Hodgson** of Rochester; and Secretary-Treasurer—**Dr. Frank J. Anderson** of Minneapolis.

* * *

Dr. Vincent Ryding, Mountain Lake, accepted a fellowship in the Department of Physical Medicine and Rehabilitation at the University of Colorado medical center at Denver.

* * *

Newly-elected president of the Tuberculosis and Health Association of Hennepin County is **Dr. Sumner S. Cohen,** of Glen Lake. **Dr. Earl T. Opstad** of Minneapolis was elected second-vice president. **Drs. H. E. Drill** and **D. S. Fleming** of Hopkins will serve on the association's executive committee.

* * *

Dr. Alfred Uihlein, consultant in neurologic surgery in the Mayo Clinic, addressed the Texas Chapter of the Alumni Association of the Mayo Foundation.

* * *

Dr. William J. Alcorn of Wabasso has been named medical consultant to the Redwood County Tuberculosis and Health Council.

Dr. Lyle Hay of Minneapolis is the newly-elected president of the Minnesota Surgical Society. **Dr. David P. Anderson** of Austin is outgoing president.

* * *

Dr. Richard Anderson, professor of psychiatry and neurology, University of Minnesota, was the guest speaker at the dinner meeting of the Winona County Medical Society.

* * *

A merger of the Falls and Starekow Clinics in Thief River Falls has taken place. Associates in the new organization will be **Doctors George Martin, James Erickson, H. Paul Wendt, George Van Rooy, Ernest Thorsgard** and **R. G. Anderson.**

* * *

Dr. O. J. Seifert, New Ulm, was honored recently for his outstanding and long term of service in New Ulm at the Licensed Practical Nurses State Convention.

* * *

Dr. J. L. Bonner will establish a practice in Grand Rapids. **Dr. John W. Gridley** has announced that his interest in the Arlington Clinic has been sold to **Doctors R. H. Kath** and **Gordon O. Greene.**

* * *

Twenty-four fellows of the Mayo Foundation who have displayed special distinction in various fields of graduate medical studies were honored recently in Rochester. None of the twenty-four were from this area.

* *

Doctors Mark and **Richard Virnig** opened a new medical center at Wells recently. **Dr. Homer Carlson** left the Korda Clinic in Pelican Rapids to become an associate of the Palen Clinic, Minneapolis.

* * *

Dr. Arthur Laird and **Dr. Murdoch A. Nicholson** of Duluth have been given the University of Pennsylvania Medical School's Distinguished Senior Alumni Awards.

* * *

Dr. Clyde E. Culp and **Dr. John R. Hill,** section of Proctology of the Mayo Clinic, received the award of the Ohio Valley Proctologic Society for their paper, "Malignant Lymphoma Involving the Rectum."

* * *

Dr. and Mrs. B. H. Simons recently attended the General Practitioners Convention at Las Vegas.

* * *

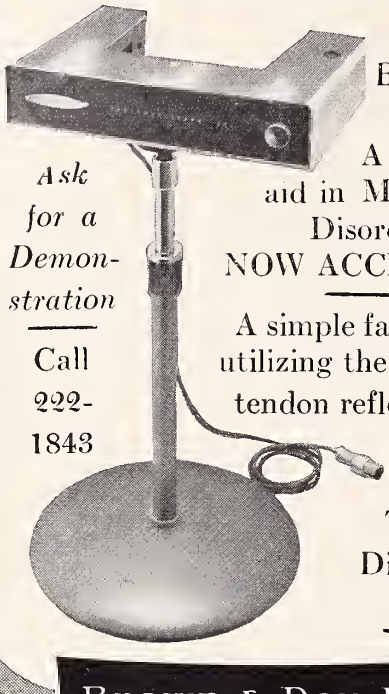
Forty-one diplomas were presented to the members of the 1962 St. Barnabas School of Nursing in June. **Dr. Donald Bohn,** chief-of-staff, presented the awards.

* * *

Dr. Hugh N. Boroson, radiologist, terminated his staff position at the Northwestern Hospital at Thief River Falls to accept a position at St. Mary's Hospital in Troy, New York.

* * *

Doctors Jerome T. Grismer, Martin A. Segal, Sumner Cohen, Thomas J. Kinsella, all of Minneapolis and **Dr. Allen C. Good, Jr.** of Rochester will be among the doctors scheduled to speak at the Methodist Hospital symposium on Chest Diseases on Saturday, September 15th.



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GENERAL PRACTICE RESIDENCY — one or two year approved program — 125 bed general hospital expanding to 250. Apply: Dr. Donald Roach, Chairman, Residency Committee, Midway Hospital, St. Paul 4, Minnesota. Must be eligible for Minnesota Temporary Certificate for Graduate Training; Foreign graduates must have ECFMG certificate.

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GENERAL PRACTICE AVAILABLE. Well established practice in Southeastern Minnesota. Excellent hospital and clinic facilities. New hospital. Write Box 206, care of MINNESOTA MEDICINE, St. Paul, Minn.

CALIFORNIA - MODESTO — Senior Psychiatrist to head up admission unit. Staffing includes psychiatrists, social workers, psychologist and secretarial help. With certification in psychiatry pays $16,056 a year to start and $16,860 after two years. Professional Training Director position available also at a higher salary. Pleasant community with excellent schools and recreational facilities including nearby boating and fishing. Two hours to ocean beaches, Sierra Nevadas and San Francisco. Furnished home available at hospital. 40 hour week, 3 weeks' paid vacation, liberal retirement program. Write to W. M. O'Brien, M.D., Superintendent and Medical Director, Modesto State Hospital, Modesto, California.

SEVEN MAN group in Minnesota has immediate opening for board certified or eligible internist. Write Box 203, care of MINNESOTA MEDICINE, St. Paul.

WANTED General Practitioner for two man group. Central Minnesota. Two miles from 300 bed hospital. Will offer a salary percentage and future partnership. Two months vacation. Write Box 204, care of MINNESOTA MEDICINE, St. Paul.

RESIDENCY IN INTERNAL MEDICINE — three years, approved. RESIDENCY IN GENERAL SURGERY — four years, approved. Vacancies at first year level. Voluntary, general, medical-surgical hospital of 401 beds affiliated with a large (30,000 visit/year) indigent, outpatient center. Specialist staff and active teaching and research programs with over 90 per cent of intern quota filled annually through NIMP. Write: Chairman of Education & Research Committee, The Charles T. Miller Hospital, 125 West College Avenue, St. Paul 2, Minnesota.

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APPROVED PSYCHIATRIC RESIDENCY for General Practitioners or others: First year appointment beginning July 1, 1963 in well integrated psychiatric training program associated with State University of Iowa Psychiatric Department and the University of Nebraska College of Medicine. Requirements: Must be a citizen of United States or have expressed an intention of becoming one; have completed internship four years prior to July 1, 1963, and have been in practice during that period. Time served in Armed Forces or residency training in some other specialty acceptable. Preference given to applicants under forty-five years of age. Annual stipend $12,000. Applications should be made immediately. Write W. C. Brinegar,. M.D., Superintendent, Mental Health Institute, Cherokee, Iowa.

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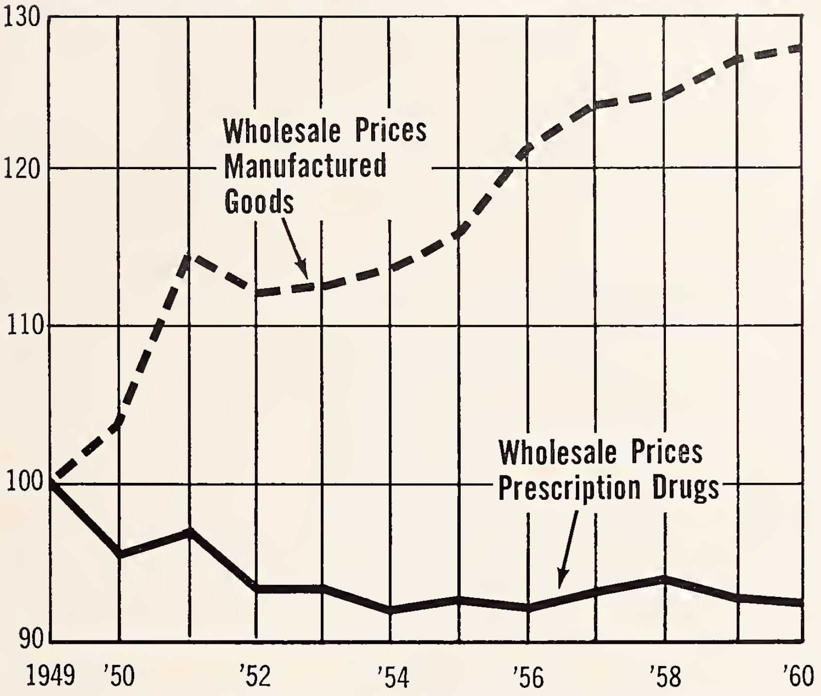

Despite ten years of inflation, wholesale prices of prescription drugs have not risen to keep pace with increased manufacturing and distribution costs. This chart compares the wholesale prices of all manufactured goods, up 26.7 percent, with the wholesale price of prescription drugs, down 7.6 percent, during the period 1949-1960.

Source: U.S. Bureau of Labor Statistics, Wholesale Price Index; John M. Firestone, Assoc. Professor, College of the City of New York. Base, 1949 — 100.

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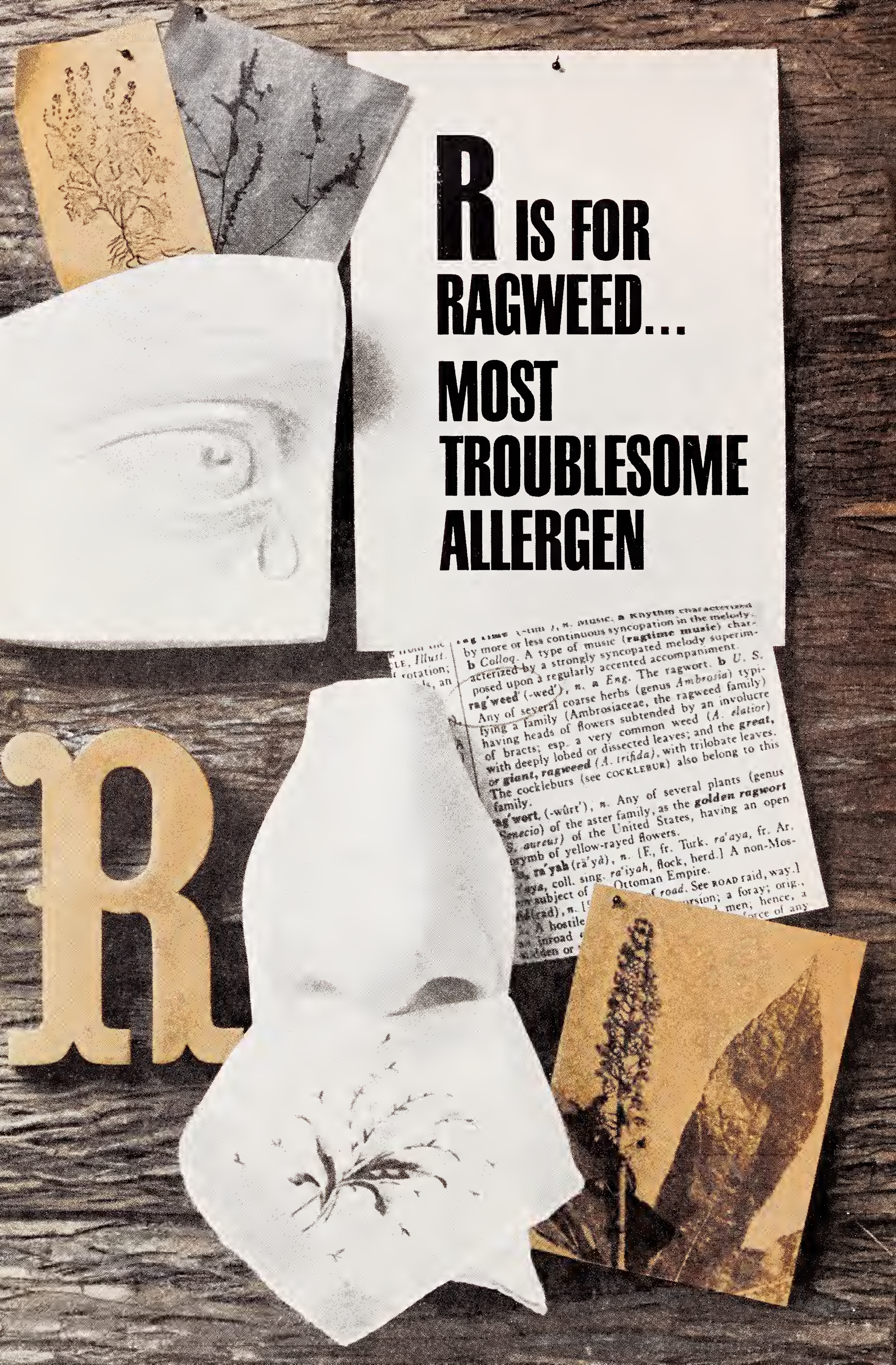

by more or less continuous syncopation in the melody. **b** *Colloq.* A type of music (**ragtime music**) characterized by a strongly syncopated melody superimposed upon a regularly accented accompaniment.

rag'weed' (-wēd'), *n.* **a** *Eng.* The ragwort. **b** *U. S.* Any of several coarse herbs (genus *Ambrosia*) typifying a family (Ambrosiaceae, the ragweed family) having heads of flowers subtended by an involucre of bracts; esp. a very common weed (*A. elatior*) with deeply lobed or dissected leaves; and the **great,** or **giant, ragweed** (*A. trifida*), with trilobate leaves. The cockleburs (see COCKLEBUR) also belong to this family.

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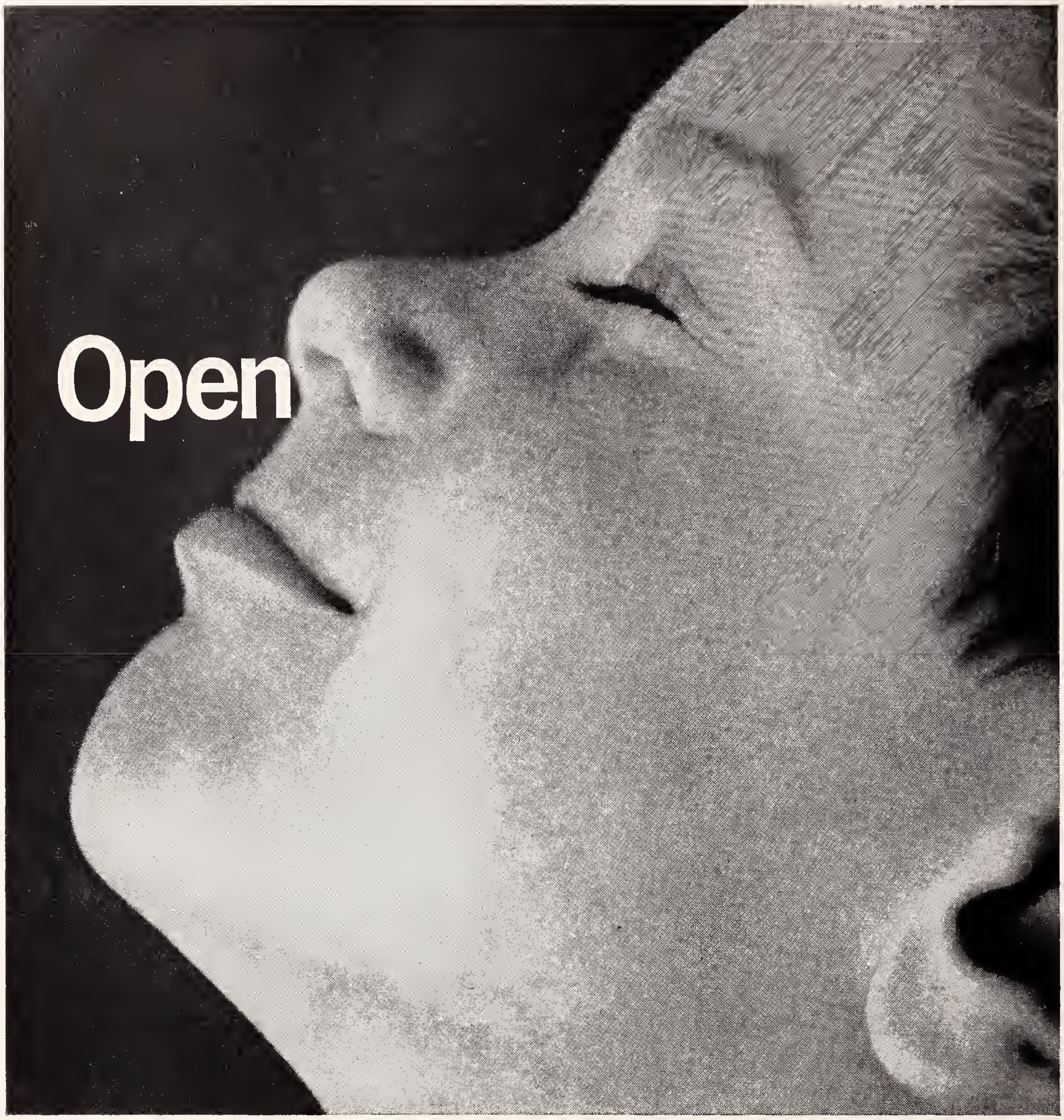

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President's Letter

TWO IMPRESSIVE A. M. A. LEADERS

American medicine is uniquely favored by the quality of leadership which it enjoys. This was pointed up by the recent induction as president of the American Medical Association of Dr. George Fister, of Ogden, Utah. His mature and active leadership will be effective. Moreover, the cause of American medicine was advanced by the fact of the recent selection of Dr. Edward Annis of Miami as president-elect.

Dr. Annis has willingly and effectively entered numerous forums in more than half of the states to present medicine's position in the care of patients. He has successfully debated the protagonists of visionary health-care schemes which would bring about deterioration of medical care from its current excellence in the United States. As a spokesman he has reached the people in discussing issues relating to health care, particularly among the aging. The current ground swell of public opinion which understandably has rejected socialistic proposals as a solution to our health-care needs was generated in a large measure by his efforts.

The election of Dr. Annis to high office was not achieved without changing precedents within the American Medical Association. It is to the credit of this organization that when critical issues arise, sufficient flexibility allows appropriate action to be taken swiftly. Unlike many predecessors in his new office, Dr. Annis has not worked his way through the ranks as a delegate, council member or trustee. He has served the Florida Medical Association on legislative committees and has had extensive organizational experience in other endeavors, such as the Junior Chamber of Commerce and political activities in his state. More recently, he has served as chairman of the Speakers' Bureau of the American Medical Association. His boundless knowledge of the sociologic aspects of medical practice, his wide comprehension of medical ethics and his facile manner of elucidation and argumentation inevitably placed him pre-eminently in the forefront of other fine candidates for the presidency.

Minnesota physicians may take pride in the role our state played in Dr. Annis' election. Our officers and delegates were prominent in pointing out his unique qualities and the necessity we faced in selecting a man who could indeed serve as our forceful and resolute spokesman. His effectiveness in this role will be enhanced as he assumes a mantle which he has unofficially shared, to a degree, with others. Although the communication from our state first emphasized to other delegates the remarkable qualities of Dr. Annis in relation to the high office conferred upon him, in another sense such communications served only as a catalyst: the essential rightness of the choice was apparent.

All the physicians of Minnesota join me, I am certain, in wishing for Dr. Fister and for Dr. Annis successful terms as president and president-elect of the American Medical Association.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
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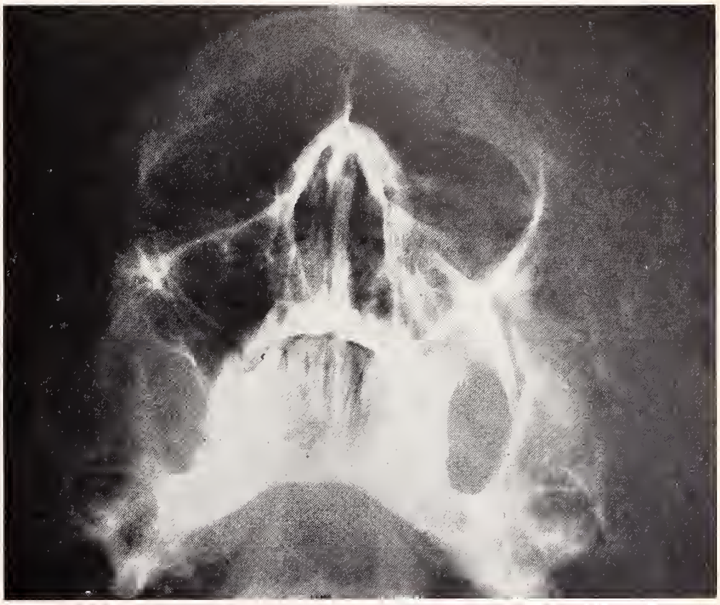

Fig. 1. Anteroposterior roentgenographic view (Waters position) of the facial bones showing an uncomminuted fractured and displaced left malar bone.

Fractures in the Malar Region*

JOHN B. ERICH, M. D.†
Rochester, Minnesota

In spite of present-day methods of surgery, many fractures in the malar region are still being neglected. The explanation is twofold: (1) some of the simpler fractures are completely overlooked at the time of injury, and (2) many of these fractures are disregarded because the patient has other injuries that are much more serious and occupy all the attention of the surgeon. Unfortunately, fractures in the malar region, especially when left untreated, usually leave a facial deformity—a flattening of the cheek that is more or less conspicuous. Moreover, these fractures may produce ocular disturbances such as diplopia, enophthalmos, and even malposition of the eyeball itself. Although treatment does not always prevent such complications, it does tend to make them less noticeable or troublesome.

In the diagnosis of fractures involving the malar region, X-ray examination is indispensable, for degrees of displacement and comminution can be determined in no other way. Although some surgeons obtain many different views in these cases, the view that provides all of the necessary information is the anteroposterior view in the Waters position (fig. 1 and 2).

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*Read at the Minnesota Surgical Society meeting in Minneapolis, November 3, 1961

†Section of Plastic Surgery, Mayo Clinic and Mayo Foundation

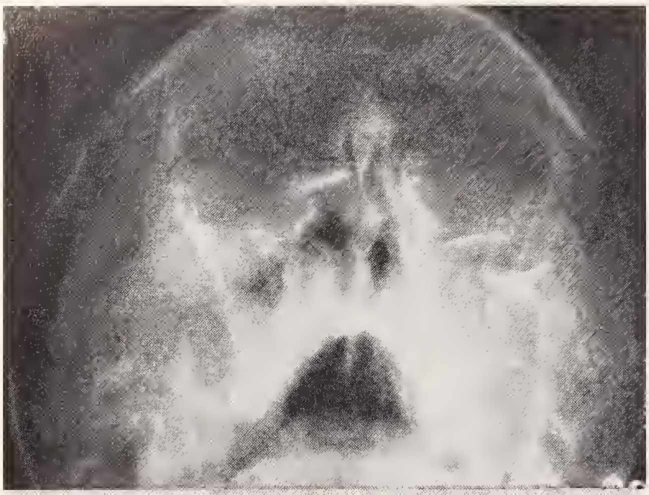

Fig. 2. Anteroposterior roentgenographic view (Waters position) of the facial bones showing a comminuted fracture of the left malar bone and also some comminution of the right inferior orbital rim.

By means of roentgenograms, one not only must decide whether displacement of fragments exists, but also must determine whether there is comminution (fig. 1 and 2) of the involved bone. The question of comminution or noncomminution has much to do with the selection of treatment.

I have found it convenient from the standpoint of treatment to divide fractures of the malar region into four groups: (1) uncomminuted fractures less than a week old, (2) uncomminuted fractures 1 to 4 or 5 weeks old, (3) comminuted fractures not more than 6 weeks old, and (4) fractures that are several weeks, months, or years old.

Uncomminuted Malar Fractures Less Than a Week Old

For uncomminuted malar fractures less than a week old, treatment is uninvolved. A small curved forceps inserted under the lower border of the zygoma through a tiny incision in the skin is an effective instrument for elevating the bone to proper position. With a little traction upward and forward, the bone will snap into place and stay there without fixation (fig. 3). Some men prefer a different approach, going through the mouth or through an incision in the temporal region (Gillies' method). However, it makes little difference what means of elevation are employed, as long as the fracture is reduced.

An important feature in the treatment of this type of fracture is early reduction. The sooner the bone can be brought into proper position after the injury, the better it will stay in place. If 7 or more days have elapsed before such an uncomminuted zygoma is elevated, the fracture is easily reduced, but the repositioned bone will not stay in proper position without some form of fixation.

Frequently, the treatment of an uncomminuted displaced malar bone is deferred for several days because the patient has other injuries that are more serious. However, in these cases I would like to re-emphasize the importance of early reduction, which can be carried out under local anesthesia if necessary. A little of the anesthetic agent infiltrated near the infraorbital foramen and along the zygomatic arch will provide effective

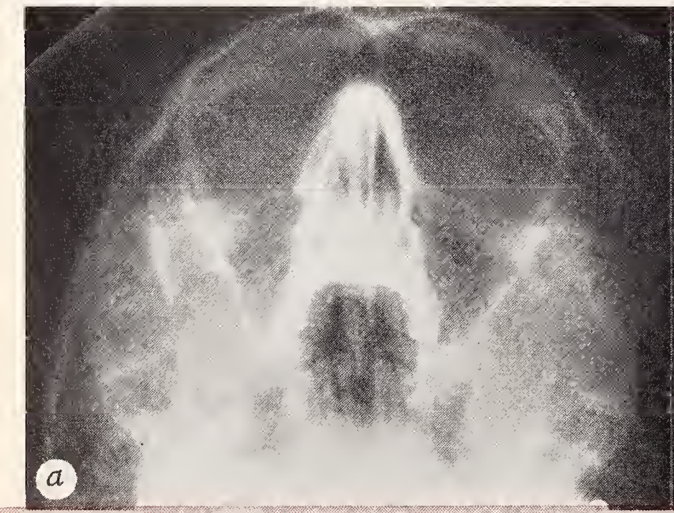

Fig. 3*a*. Depressed fracture of the right malar bone involving mainly the zygomatic arch.

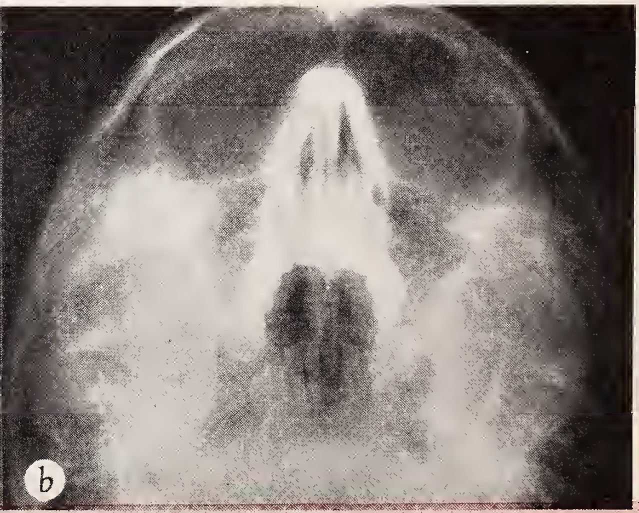

Fig. 3b. Fracture reduced by making upward traction on a small curved forceps placed under the displaced malar bone through a small skin incision. The reduced fracture required no fixation.

anesthesia, permitting reduction of the fracture even though the patient is confined to bed.

Uncomminuted Malar Fractures 1 to 5 Weeks Old

This type of fractured zygoma can easily be elevated by one of the methods just described, but some form of immobilization is required to maintain satisfactory alignment. Fixation can be accomplished either by direct wiring (fig. 4*a*) or by an intra-antral pack (fig. 4*b*).

The first technique necessitates some small incisions: usually one is made over the frontozygomatic suture, sometimes one is prepared over the temporozygomatic suture, and only rarely is one needed near the infraorbital foramen. Small holes are drilled in the fragments, which are then approximated either with heavy chromic catgut or fine stainless-steel wire (fig. 4*a*). Usually, one such wire is sufficient, although in some cases two or three wires are necessary for adequate immobilization.

The second technique of obtaining fixation requires exposure of the antrum through a Caldwell-Luc opening, after which the displaced malar bone is elevated and finally immobilized by means of an intra-antral gauze pack (fig. 4*b*). I prefer the second form of treatment, which, in general, is simpler and just as effective. However, if after insertion of the pack the malar bone does not occupy a completely desirable position, one can still resort to direct bone wiring.

Comminuted Malar Fractures up to 6 Weeks Old

When a malar bone is badly comminuted, I believe that the antrum should be opened through a Caldwell-Luc exposure, which provides an opportunity to inspect the antral cavity. In addition, the surgeon can insert the index finger of one hand within the antrum and with the other hand can externally manipulate the fragments into correct alignment. For immobilization, an intra-antral gauze pack is inserted and left undisturbed for 2½ to 3 weeks. If, after insertion of the pack, a large fragment does not occupy a satisfactory position, its position can often be improved by direct bone wiring (fig. 5).

Two complications can arise from inserting a pack in the antrum too tightly. First, the cavity can be packed under so much pressure that the malar fragments are actually elevated beyond their natural position; as a result, the zygoma may protrude a trifle, producing a defect more conspicuous than the original depression. Although an intra-antral pack must be firmly inserted, it should not be pressed in so tightly that the malar

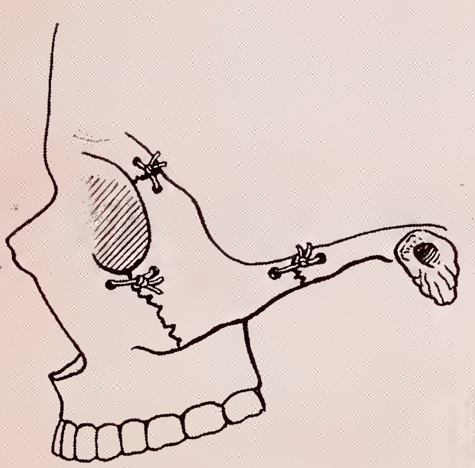

Fig. 4*a*. Fixation by direct bone wiring for an uncomminuted fracture of the malar bone more than a week old. The loose bone can be held in place with wires or heavy catgut sutures. Usually one wire is sufficient; occasionally two are needed; and only rarely are three required.

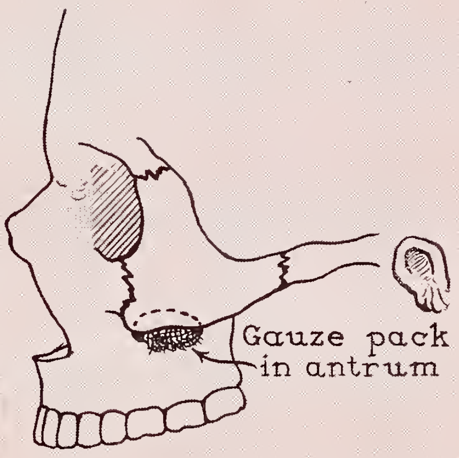

Fig. 4*b*. Another method of fixation for an uncomminuted fractured malar bone more than a week old. Bone is elevated through a Caldwell-Luc exposure of the antrum and immobilized by means of a gauze pack in the antrum.

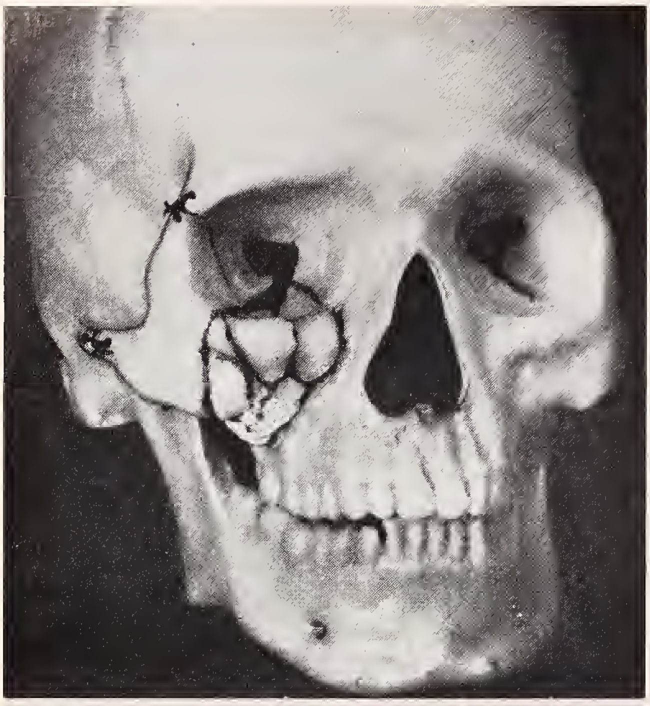

Fig. 5. Wax model of skull showing comminuted fracture of the right malar bone. Fragments are elevated through a Caldwell-Luc exposure of the antrum and immobilized with a gauze pack within the antrum. If a large fragment of bone is displaced, it can be immobilized in better position by direct bone wiring as shown.

bone is elevated beyond normal limits. Second, a strip of gauze packed down too tightly can prevent the escape of infected material from within the antral cavity. This difficulty can be obviated by inserting a Penrose drain as well as the pack into the antrum. The free end of the drain extends through the oroantral opening and is exposed in the mouth, thus permitting the escape of secretions accumulating within the sinus. Without the presence of a drain, infected material in the antrum may burrow through the overlaying skin, discharge externally, and produce a great deal of conspicuous and unnecessary scarring.

Instead of using a pack, some surgeons prefer a small rubber bag inflated with air or fluid for immobilization of the bone fragments. Moreover, in treating comminuted fractures of the malar region, a few men do not open the antrum through a Caldwell-Luc exposure; instead, they prepare an intranasal window in the antrum and insert a rubber bag through the nose into the antrum. On inflation, the bag reduces and immobilizes the fragments. While this method may give satisfactory results in some cases, I believe that a Caldwell-Luc opening through which the antral cavity can be inspected is a more satisfactory method of treatment, especially for the inadequately-trained surgeon.

At the end of 2½ to 3 weeks, the gauze pack and drain are removed through the mouth as an office procedure. In most cases, the oroantral communication will close spontaneously within a few days or weeks. If it does not heal, however, an intranasal window into the antrum must be prepared for drainage before any attempt is made to close the oroantral opening. Occasional failure of this opening to heal has led some surgeons to prepare such a window in every case of comminuted fracture of the malar region. Frequently, the loose end of the gauze pack is drawn into the nasal cavity through the antral window, after which the oroantral opening can be tightly sutured. At the end of 2½ to 3 weeks, the pack is then taken out through the nostril. Although this method of removing an antral pack allows for immediate closure of the oroantral opening, I dislike withdrawing the pack through the nose for three reasons: *first*, the pack may impinge on a spicule of bone and cause a great deal of pain on removal; *second*, drawing out the pack through the nostril may start a hemorrhage that is difficult to control; and *third*, a Penrose drain cannot be inserted through the nostril into the antral cavity so as to provide dependent drainage.

Fractured Malar Bones More Than 6 Weeks Old

Fractured malar bones that are more than 6 weeks old present a special problem. Attempts to chisel the bone free and restore it to its original position usually are unsuccessful. The bone can be elevated in this manner, but the excess scar tissue around the sites of fracture tends to gradually displace the malar bone in spite of any form of fixation. Moreover, because of absorption of some of the bone along the old lines of fracture, it is not always possible to restore the bone to its original position. Consequently, in these cases, I prefer to build up the flattened cheek to more-normal contour by means of cancellous-bone chips from the crest of the ilium (fig. 6). Through an incision in the temporal region, the skin over the depressed zygomatic region is elevated to form a pocket into which the crushed cancellous-bone chips are introduced (fig. 7). Molding of the

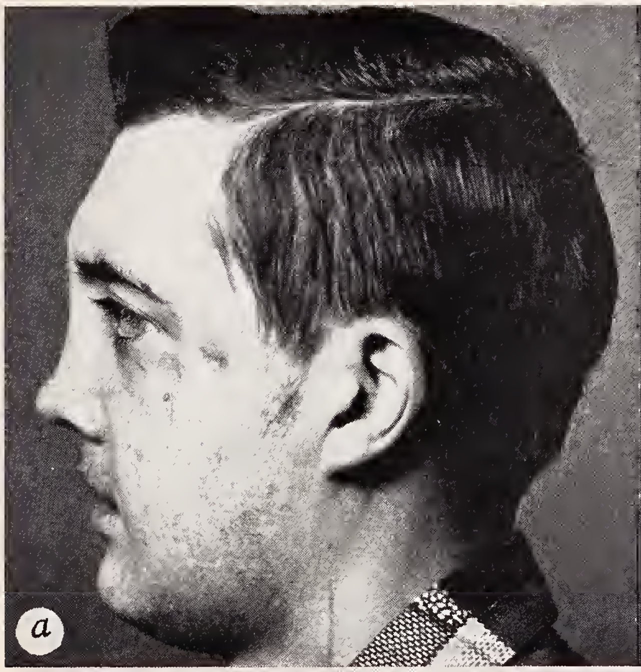

Fig. 6*a*. Flattening of left cheek due to an old comminuted malar fracture.

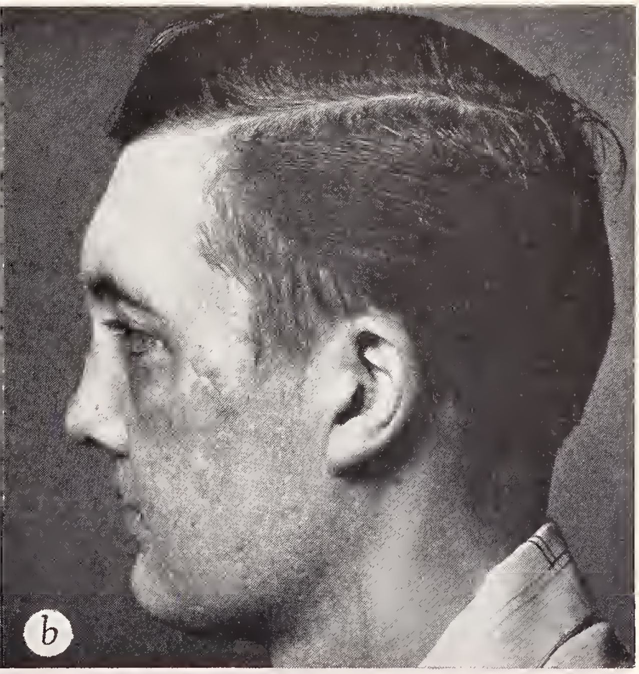

Fig. 6b. Depression defect corrected by means of cancellous bone from the crest of the ilium inserted through an incision in the temporal region.

cancellous-bone mass to proper contour is accomplished with finger pressure, and healing occurs rapidly.

In my experience, this is the simplest method of building up a depressed malar region to more-normal contour (fig. 6), and the cancellous bone is easily obtained from the crest of the ilium. Some men use costal cartilage for this purpose. However, much fluid often develops around cartilage implants during the immediate postoperative period; as a result, the implants may become displaced. Moreover, cartilage, even when diced, is difficult to contour. Because of these difficulties with cartilage, I prefer cancellous bone.

Complications of Malar Fracture

Many complications can arise as a result of fractures in the malar region. When an external object penetrates the cheek and comminutes the zygoma and floor of the orbit, edema of the eyelid often ensues because of cicatricial obstruction of the lymphatics. Such edema not only cannot be surgically eradicated but also may require months to disappear spontaneously.

Another annoying complication is persistent diplopia. This symptom generally is the result of an injury to the attachment of one of the extraocular muscles, usually the inferior oblique. If reduction of the fracture does not correct the diplopia, it tends to remain a permanent complication. Occasionally, the ophthalmologist can help the situation; and in most cases, the patient learns to accommodate himself to the persistent

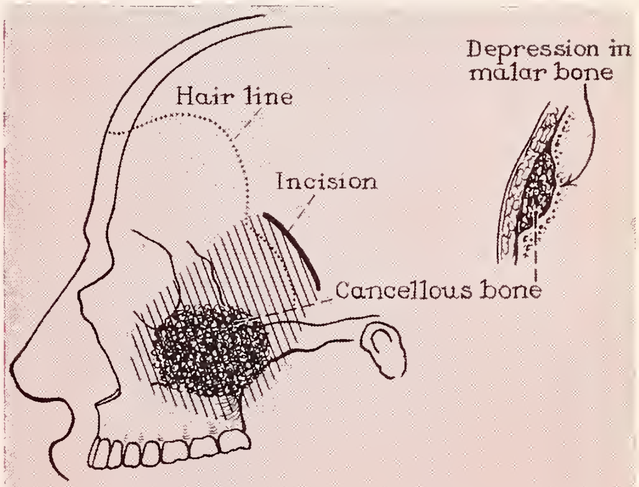

Fig 7. Diagram showing technique of using cancellous bone to build up contour of cheek flattened by an old depressed fracture of the malar bone. Soft tissues over the site are undermined through an incision in the temporal region. Cancellous bone from the crest of the ilium is inserted and molded by finger pressure to produce a more normal contour for the flattened cheek.

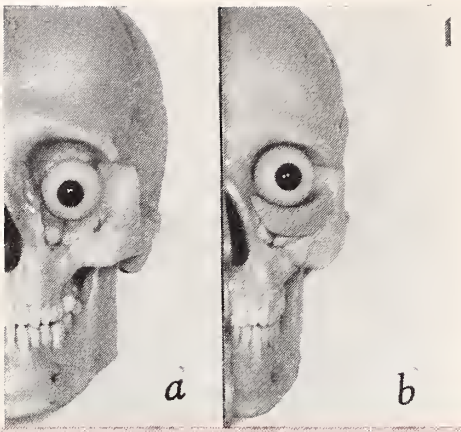

Fig. 8*a*. Wax model showing an old comminuted fracture of the left malar region and floor of the orbit with downward displacement of the eyeball.

Fig. 8*b*. Downward displacement is corrected with a cartilage or bone graft inserted through a skin incision along the floor of the orbit. See text.

double vision. Nevertheless, it is a troublesome complication, and the surgeon should make a determined effort to prevent the occurrence of this condition by proper reduction of the fracture.

Enophthalmos is a further complication that can arise from much displacement of the bony fragments, with enlargement of the orbital cavity. If this problem is not automatically corrected by reduction of the fractures, it persists permanently.

The floor of the orbit may be so badly comminuted, often with loss of some of the smaller fragments of bone, that the eyeball drops down a few millimeters (fig. 8*a*). Manipulation of the fragments from within the antrum will sometimes correct this ocular displacement, but in many cases the orbital floor is so severely comminuted that insufficient bone remains to provide support for the globe. If intra-antral manipulation does not correct this difficulty, the floor of the orbit can later be exposed through an external incision and rebuilt, either with some type of plastic sponge, such as Ivalon, or with a cartilage or bone graft.

A skin incision is made in the region of the infraorbital margin of the orbit. Soft tissues are divided to expose the underlying periosteum, which is incised horizontally. By means of an elevator, the soft tissues are lifted away from the remaining bony fragments in the orbital floor,

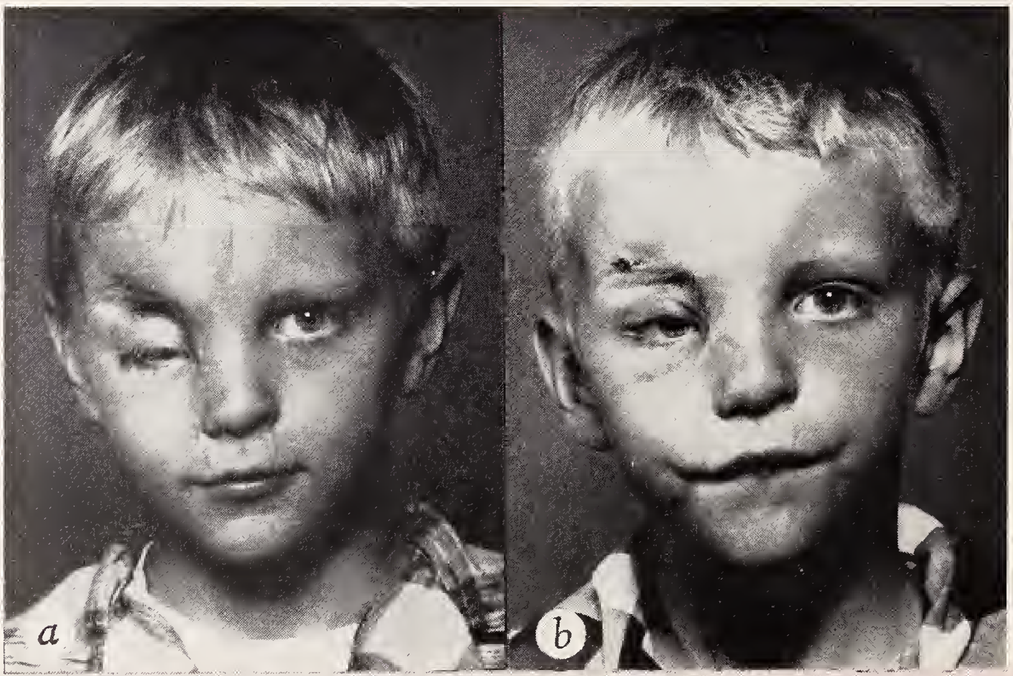

Fig. 9a. Downward displacement of the right eye due to severe comminution with loss of bone in the floor of the left orbit.

Fig. 9*b*. Eye elevated to more-normal position by using an autogenous bone graft obtained from the crest of the ilium. See text.

thus making a deep pocket below the soft-tissue structure in the eye socket. Into this pocket, a graft is introduced for support of the globe. For many reasons, I prefer not to use a plastic sponge. Moreover, I have discontinued the use of autogenous cartilage for this purpose because of the postoperative accumulation of fluid, which may permit displacement of the implant. Bone from the crest of the ilium seems to provide the best tissue for rebuilding the floor of the orbit. A piece of cancellous bone from which the cortex has been removed is cut to the desired shape and inserted into the surgically prepared pocket; this graft should make a bridge across the defect in the floor but need not fit too accurately. Chips of cancellous bone are packed all around the bone implant, after which the wound is sutured.

The bone transplants heal rapidly and from a solid mass within a week to 10 days (fig. 8*b*). Although these grafts do not restore the normal movements of the eyeball, they do hold the globe up in more normal position and thereby improve the patient's vision and appearance (fig. 9).

WHAT'S YOUR DIAGNOSIS?

A 64-year-old white male was operated upon on March 30, 1962, at which time a large carcinoma occupying the proximal half of the stomach was removed. There was no evidence of hepatic metastasis. The gallbladder, spleen, pancreas, small bowel, and colon were normal. A total gastrectomy was done and the esophagus was anastomosed to the first portion of the duodenum. The postoperative course was uneventful until the fourteenth postoperative day when the patient's temperature rose to 101 degrees F. The abdomen was soft, not tender, and the chest was clear. The breath sounds were normal. The following night the temperature rose to 103 degrees F. and the upper quadrant of the abdomen was then found to be tender. There was no palpable mass. The white count was found to be 17,800 with 94% neutrophiles. The chest X ray showed a high right diaphragm and some atelectasis in the right base. An abdominal scout film showed no free subphrenic air and no air-fluid level to support a presumptive diagnosis of subphrenic abscess. The right upper quadrant tenderness, the elevated temperature, and elevated white count persisted. The patient had been taking food by mouth. The symptoms persisted and it was obvious that an acute abdomen existed.

On the 17th postoperative day the patient was re-explored.

WHAT'S YOUR DIAGNOSIS? SEE PAGE 807

Physical fitness builds mental fitness

Only after death do we realize the infinitesimally small importance of one man's life.

Latent or overt psychiatric disease can make ordinary surgical procedures a difficult and unrewarding experience. In the broad sense every physician must be a psychiatrist to a degree which enables him to correctly evaluate surgical candidates with respect to psychotic, psychoneurotic, or psychopathic tendencies. This is a difficult assignment, and the author, in a clear and concise manner, provides helpful suggestions for every practicing doctor.

Surgery in the Psychiatrically Ill Patient

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A workup of a patient should not be considered completed unless the physician in charge knows as much about the patient's mental status as he does about the physical status. A complete psychiatric history is not indicated, although that would be beneficial in understanding the psychopathology of the patient. If a physician takes into consideration his patient's mental status, he can provide better medical care and avoid many pitfalls and frustrations.

If the mental status indicates severe abnormality in the patient, the doctor can take the time necessary — if he has it — to do a complete psychiatric history, or he can refer the patient to a psychiatrist for definitive diagnosis, for confirmation of his impression, or for definitive psychiatric treatment.

Any well-trained physician should be able to do a mental status of a patient and classify the patient psychiatrically. This does not mean that a physician should have a form in front of him and check off blanks as he asks questions. Spontaneous discussion of the patient's problems will reveal more of the patient's feelings than rigid formalized questioning. Usually a physician should be able to render a decision as to his patient's psychiatric status as soon as he finishes his routine history and physical examination, providing he has observed and studied his patient carefully and asked appropriate questions.

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Judicious interviewing of a patient in such a way that psychopathological mental content comes forth is a fine art that every physician should strive for. If the physician manifests genuine interest and understanding and is skillful in interviewing, the patient will not only reveal his feelings in the interview, but in many cases be eager to do so, and he will not spend all his allotted time on somatic complaints.

Evaluation of Psychotic Patient

In order to determine the mental status, the physician should consider the following six points relative to the patient:

1. General appearance and manner
2. Stream of talk and activity
3. Emotional tone
4. Mental content
5. Intelligence and judgment
6. Insight

By *general appearance* is meant how the patient walks, dresses, gestures. Is the patient cooperative, resistant, apprehensive, etc.? In a study, a skilled psychiatrist[1] observed 100 patients without questioning them and rendered diagnostic impressions that were 80% correct.

By *stream of talk* is meant how the patient communicates. (Speech reveals thought but can also conceal it). Does the patient talk fast or slow, or is he mute? Is the patient's speech disconnected? Is there flight of ideas?

By *emotional tone* is meant the patient's prevailing mood and his range and depth of feeling. This may be suggested by his muscular tensions, bodily attitude, and facial expressions. Is the patient sad, elated, anxious? Careful questioning is indicated here.

By *mental content* is meant the thoughts in the patient's consciousness. Is he hypochondriacal, suspicious, preoccupied, delusional, obsessional, phobic, depressed?

By *intelligence* is meant how bright is the patient, how educated, how confused. Is he able to remember? Is he oriented as to time, place, and person? What is his range of information? By judgment is meant how well is the patient able to utilize the knowledge he has.

By *insight* is meant does the patient realize what his present situation is.

Once the mental status has been considered, the physician must classify the patient. First he must rule out acute and chronic organic brain disorders. This is relatively easy and requires obtaining a careful medical history and noting the presence of gradual changes in personality, and then observing if the patient is confused, disoriented, emotionally unstable, or has a general reduction in mental capacity and judgment.

The Sociopath and the Psychopath

After evaluating the organic diseases, the physician must consider the so-called functional diseases and separate them into psychotic, neurotic, or personality disorders. It should be kept in mind that many psychotic persons are not in institutions but in the community, where they function to some degree. Then the doctor must decide if his patient has a personality disorder, and here, particularly, he must distinguish between the psychopath and the sociopath. In general, the neurotics evidence anxiety, the psychotics are not in contact with reality, and the personality-disordered show social maladjustment — that is, the personality, instead of utilizing symptoms expressed in mental, somatic, or emotional terms in its efforts to secure adjustment, makes use of patterns of action or behavior.

The psychotic individuals may present themselves with hypochondriacal symptoms, which may be bizarre, such as "smelly discharges," peculiar feelings in the body, as well as usual ones, such as pain in the abdomen, etc. The sociopaths and the psychopaths may present themselves with almost any symptom, but they are always ambivalent, "acting out," manipulative, impulsive, conscienceless patients.

The Normal and the Neurotic

The rest of the patients, then, are the normal, and the neurotics of various degrees. The neurotics include those with anxiety conversation and compulsive reactions, as well as the depressives and the phobics.

These are fancy terms, and simpler ones can be used, such as nervous, tense, hysterical, fearful, and fussy. The hysterical patient will deny that he has any illness, or he will ignore or be indifferent to severe symptoms. This is termed "la belle indifference." The fearful patient will have persistent fears that he has an illness, in spite of continued reassurance on the part of the physician to the contrary. The depressed patient may present himself with intense feelings that something is wrong with him and be very convincing because of his unconscious feelings that he wants to be mutilated or punished. The patient is using his symptoms to get affection or attention, and the unwary surgeon may be misled to do surgery.

Interestingly, most psychoneurotics show immediate improvement postoperatively, but this is only temporary. They feel better only while they are getting all the attention that is concomitant to the surgery.

Unnecessary Surgery

There would be no question in any physician's mind that unnecessary surgery had been done if he were to study the patients in a State Hospital and see how many operations have been performed on psychotic patients before the psychosis was recognized, particularly in the gynecological field. Not enough physicians doing gynecological surgery are familiar with the fact that emotional disturbances can produce disordered functions and distressing symptoms in the pelvic region and that therefore, too many women undergo such operations as suspension of the uterus, curettage, cervical amputation, removal of adnexa, plastic surgery, appendectomy and even hysterectomy for gynecological complaints that have a psychic basis.

Interestingly, the physician may feel that his surgery has been helpful to the patients, for they have not returned to him with their complaints. Instead, they have gone to other doctors, complaining bitterly that the last surgeon had not helped them. Sometimes they have another operation; sometimes they are dismissed by an angry physician; and sometimes they are shipped off summarily to a psychiatrist, who may shake his head in despair or advise some belated psychotherapy or hospital treatment.

Similar remarks can be made relative to the outcome with psychoneurotics. Bennett,[2] a psychiatrist, studied 100 hospitalized psychoneurotics and found that 73 had had surgery performed on them. They had been exposed to 179 different procedures—an average of 2.7 per patient. Forty-three of the 73 had had pelvic operations, and Bennett felt in retrospect that half of these were unnecessary. Another set of investigators, Macy and Allen,[3] studied 200 cases of "nervous exhaustion" and found that they had undergone 289 surgical procedures.

Psychiatrically-ill patients, as well as normal individuals, will need to undergo necessary or even life-saving surgical procedures that may be really mutilating, disfiguring, or castrating, or just thought to be so by the patient. A physician must be prepared to treat such problems preoperatively, as well as postoperatively. The patient-doctor relationship must be utilized here, and its efficient utilization may be as important as a blood transfusion in reducing the risk of operation, as well as promoting healing of the wound.

How the preoperative, operative, and postoperative care is carried out depends upon the psychiatric status of the patient. The same procedure in three different patients may produce excellent, satisfactory, or poor results, depending upon the patient's mental state.

Comments & Conclusions

In all psychiatrically ill patients surgery should be kept at a minimum, for it is an experience which will provoke an emotional response. The stress is easily absorbed by the emotionally mature and presents, therefore, no problem in management. The oversensitive, overacting patient with latent or overt psychoneurotic tendencies, when undergoing surgery, may develop clinically significant psychiatric difficulties. The psychotic person may be a problem for the surgeon because he does not handle new situations well and misinterprets reality situations. The sociopath or the psychopath obviously must not be operated upon except for acute emergencies, because inherently he creates a problem in general management.

Anyone, regardless of his psychiatric status, may require surgery, and if the attending physician will diagnose and take cognizance of the patient's emotional status and handle it appropriately either by himself or with the help of a psychiatrist, any patient can be prepared, operated upon, and discharged with a minimum of difficulty.

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PERITONEAL DIALYSIS in RENAL FAILURE

A Case Report

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The peritoneum has been used as a dialyzing membrane in renal failure since 1923. Recent improvements have been made in the solutions needed, and commercially prepared sets for their use have become available. The entire process is simple and requires no special technical help other than that available in most hospital laboratories.

This is not to say that peritoneal dialysis should be undertaken without good indication and certainly not without the closest attention of the attending physician. The technique may be used in any case of renal failure, whatever the cause, providing trocar puncture and introduction of a perforated plastic tube into the lower abdomen can be safely accomplished.

The total surface area of the peritoneum in an average adult is something over 20,000 square centimeters. Osmosis across this membrane corrects abnormalities of serum electrolytes, which normally-functioning kidneys ordinarily regulate.

The solutions used have a theoretical osmolarity of 372.0. They contain sodium, chloride, calcium, magnesium, lactate, and 1.5% glucose. Potassium is omitted because hyperkalemia is often being corrected. It may be added where serum potassium levels are normal or low. Solutions with 7% glucose are used to combat massive edema.

Technique

Through a trocar puncture in the lower abdomen, a plastic tube with multiple, fine perforations is introduced into the peritoneal cavity. Tetracycline and Heparin are added to two liters of solution which is permitted to run rapidly into the peritoneal cavity. From one to two hours later, the still-connected bottles are lowered to the floor, and the fluid is siphoned off. New tubing is then attached, and the process is repeated. Laboratory studies, including BUN, serum sodium, potassium, chlorides, and CO_2, are obtained every four hours. Measurement of the return fluid should be carefully charted to be sure there is no significant retention. The patient should be weighed if possible, as a double check on the state of fluid balance. Complete details may be found in the paper by Maxwell, Rockney, Kleeman, and Twiss. Twenty-four hours of peritoneal dialysis can be expected to accomplish what six hours' use of an artificial kidney will do. Such dialysis has been used for as long as 43 days at one time, although from six to thirty-six hours usually suffice.

Case Report

A 69-year old, single male, with a two-year history of urinary retention and overflow incontinence, uremia, moderate cachexia, and anemia, was admitted to Naeve Hospital on August 15, 1960. He had previously been hospitalized elsewhere on urethral catheter drainage for 12 days, but had continued to deteriorate.

On admission, the patient was markedly dehydrated and mentally confused. No good history was ever obtained. His general physical examination was essentially normal, except as related to his renal failure. An indwelling Foley F 16 urethral catheter was functioning well. His phostate was enlarged, grade i, firm and fibrous, but symmetrical, and with no evidence of malignancy. When the patient was admitted, his blood urea nitrogen was 139 mgm. per cent, blood sugar 139 mgm. per cent, serum sodium 130, potassium 6.6, and CO_2 11 meq/L. The urine was yellow, opaque, and pH 5; specific gravity was 1.008, albumin 4+, sugar negative; and the microscopic showed gross amounts of red and white cells. The blood showed a hemoglobin of 11.5 gm/100 cc., hematocrit 35, WBC 34,800, with a moderate increase in PMN's.

A KUB X ray was essentially normal. A cystogram showed marked vesical trabeculation, but no vesicoureteral reflux. A routine chest X ray was normal. Despite large quantities of intravenous fluids, including m/6 sodium lactate, levels remained the same for the next 96 hours, except that the BUN rose to 240 mgm. per cent. The patient underwent rapid clinical deterioration, and by the evening of August 19, 1960, he was comatose, showed so-called "uremic frost" and general clonic twitching, and appeared to be moribund. Peritoneal dialysis was instituted and continued for 38 hours.

On September 7, 1960 a suprapubic cystostomy was created, and on September 20 the patient was sent to a nursing home, where his appetite, state of nutrition, sensorium, and sense of well-being improved.

The patient was readmitted to Naeve Hospital on October 25, 1960. His hemoglobin was 6.5 gm., BUN 92 mgm. per cent, serum sodium 137, potassium 5.4, and CO_2 17 meq/L. He was given 1000 cc. of whole blood daily for three days. On October 28, 22 gm. of tissue, reported to be adenomatous hyperplasia of the prostate, were removed transurethrally. The suprapubic tube was removed on the second day postoperatively, and the urethral catheter on the fifth day postoperatively. The patient voided freely, had no residual urine, and was returned to the nursing home on the seventh day after surgery.

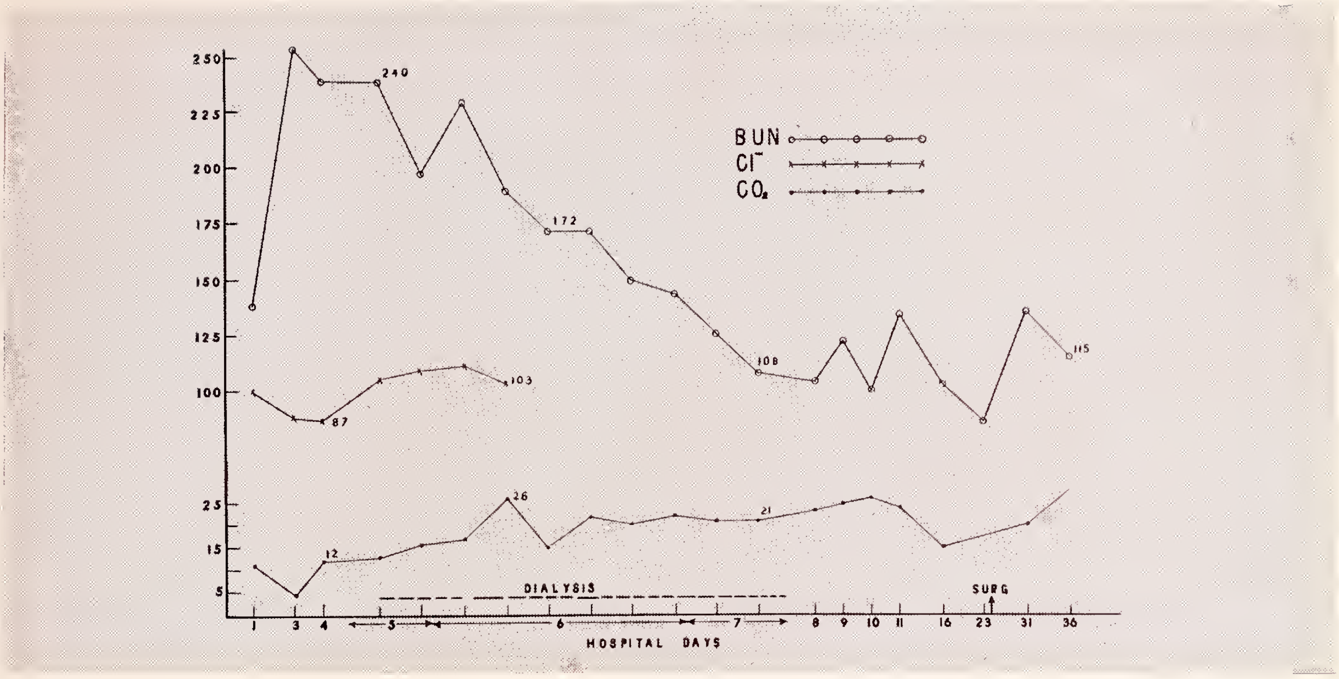
When last seen on November 28, 1960, the patient was well, alert, and vigorous.

Physiologic Mechanism of Dialysis

As toxic metabolic products build up, there is a progressive upset in the fluid and electrolyte pattern as the body attempts to compensate. Instead of depending on ultrafiltration, secretion, and selective reabsorption, dialysis operates by repeated equilibration of the various solutes on each side of a membrane. In the case of electrolytes, two liters of solution containing ideal concentrations work against the extracellular fluid volume of about 12 liters. While the abnormalities in the extracellular fluid have profound physiological effects, they deviate only slightly from a chemical standpoint and rapidly disappear. As the electrolytes approach the normal level, water moves across the cell membranes; the intracellular concentrations start returning to normal, and the fluid balance returns.

Removal of metabolic by-products is much slower. For example, urea, while not toxic, is constantly being formed and moves freely across the cell membranes. As a result, large amounts of this substance have to be removed by repeated equilibration of two liters of dialysate against a total fluid volume of about 40 liters. It is obviously impractical to reduce the BUN to normal; however, if it can be brought down to a level where the impaired kidneys can maintain an equilibrium, the patient has been carried through the acute crisis.

Examination of the figure will show how this patient responded. The black, irregular, dotted line shows the approximate time of each dialysis period. Sodium, potassium, and chlorides were done regularly in addition to the determinations presented on the chart. The sodium and potassium levels were never extremely disturbed and, along with the chlorides, rapidly returned to normal, where they remained. The CO_2 rose some-



what more slowly and then leveled off at slightly below normal levels.

At first glance, it looks as if the procedure would have continued to drop the BUN. However, closer study shows that while the first six cycles dropped it from 240 to 180, the last six lowered it only 25 mg. If the dialysis had been continued, the logarithmic nature of the curve would have been more evident.

During the last third of the period, reduced volumes totaling almost 6 liters of fluid returned, and the patient showed some signs of overhydration. This was self-corrected over the next 48 hours by a tremendous urine volume. In retrospect, the fluid retention was probably due to the intravenous infusion of 5 liters of 5% dextrose in water during this time. The fluid was drawn in the same way that increased sugar in the dialysis fluid can be used to draw edema fluid from the tissues.

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HERE'S THE ANSWER TO WHAT'S YOUR DIAGNOSIS

From Page 801

Exploration revealed an acutely inflamed gangrenous gallbladder. The gallbladder was removed and the patient had an uneventful convalescence. For additional reading see the editorial in this issue.

Every physician, almost, has his favorite disease.—Fielding

TABLE I

DOSAGE SCHEDULES FOR CLINICAL TRIAL WITH HYDROXYZINE

Weight	Early Trial	Second Trial
0-20 lb.	20 mg.	40 mg.
21-40 lb.	40 mg.	80 mg.
41-60 lb.	60 mg.	120 mg.
61-80 lb.	80 mg.	160 mg.
81-100 lb.	100 mg.	200 mg.
100 + lb.	120 mg.	240 mg.

The possibility of preventing arrhythmias during right heart catheterization using hydroxyzine has been subjected to a critical analysis. In a nicely-controlled study the authors have tested 45 children undergoing right heart catheterization with and without hydroxyzine. No significant differences in frequency of arrhythmias and conduction disturbances were noted.

Arrhythmias During

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The introduction of a catheter into the human heart is not an innocuous procedure. Some disorder of impulse initiation and/or conduction may be noted in almost every patient when continuous electrocardiographic monitoring is performed during catheterization.[1] This results from stimulation of the endocardium or by production of small subendocardial hemorrhages with the catheter.

Goldman,[2] in an early report from Johns Hopkins Hospital, noted some electrocardiographic disturbance in 49 of 50 consecutive cardiac catheterizations. More recently, Keith[3] has reported on 700 cardiac catheterizations in the pediatric age group at the Hospital for Sick Children in Toronto. Verifying the earlier experience of Goldman, Keith found that 95 percent of his patients exhibited short runs of premature systoles during the procedure. Other abnormalities (all transient) included bundle branch block (6%), complete heart block (3%), and supraventricular

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TABLE II

HYDROXYZINE PREMEDICATION STUDY

(Early Trial with Single Dosage in Fifty-two Patients)

	Atarax (26)	None (26)
Atrioventricular Block		
Prolonged PR	4	3
Variable	4	3
2:1	2	2
4:1	0	0
Complete	0	0
Right Bundle Branch Block	2	6
Atrioventricular Dissociation	1	3
Premature Contractions		
Auricular	3	3
Nodal	13	16
Ventricular	21	25
Paroxysmal Tachycardias		
Supraventricular	2	2
Ventricular	1	2
Auricular Flutter	0	0
Auricular Fibrillation	0	0

TABLE III

HYDROXYZINE PREMEDICATION STUDY

(Second Trial with Double Dosage in Thirty-eight Patients)

	Atarax (19)	None (19)
Atrioventricular Block		
Prolonged PR	1	2
Variable	2	0
2:1	0	0
4:1	0	0
Complete	1	1
Right Bundle Branch Block	1	1
Atrioventricular Dissociation	0	1
Premature Contractions		
Auricular	4	4
Nodal	4	10
Ventricular	18	19
Paroxysmal Tachycardias		
Supraventricular	3	2
Ventricular	0	0
Auricular Flutter	1	0
Auricular Fibrillation	0	0

Right Heart Catheterization

An attempt at prophylaxis

tachycardias (4%). In no patient did the premature systoles or heart block seriously interfere with the hemodynamic studies, but in nine of the 27 patients with supraventricular tachycardia the procedure had to be discontinued; five of these required digitalis for reconversion to a normal sinus rhythm.

Oral quinidine and procaine-amide have been employed as premedications in an attempt to reduce the incidence of these rhythm and conduction abnormalities. They are moderately successful in cases where there is not a great deal of manipulation of the catheter within the atrial or ventricular chambers.[4] However, the use of these drugs has not met with widespread acceptance, chiefly on the basis of their toxicity and the transitory nature of the majority of these electrocardiographic abnormalities.

Since the publication of Burrell's[5] successful treatment of a small number of adult patients with hydroxyzine* for various arrhythmias, there has been widespread interest in the potentialities

*Atarax, Roerig

of this compound as an antiarrhythmic agent. The purpose of this communication is to report on a controlled study of the effects of orally administered hydroxyzine as a premedication for cardiac catheterization.

Method and Materials

Hydroxyzine is a tranquilizing medication which has been shown in pharmacological and clinical studies to produce ataraxia without significantly affecting mental activity. Its chemical structure is analogous to that of the antihistamine dibenamine, and pharmacological tests have proved its antihistaminic activity. It has been used in the treatment of behavior disorders in children with some success.[6] Early experiments with cats showed a definite ability to reduce the incidence and duration of ventricular arrhythmias which had been induced with harman methosulfate and epinephrine.[7] On the basis of this work, Burrell and his group[5] began clinical trials with the drug.

In order to evaluate the effects of hydroxyzine in possibly reducing the incidence and severity of arrhythmias and conduction abnormalities during cardiac catheterization, a blind study was arranged. Ninety consecutive children having cardiac catheterization at the Variety Club Heart Hospital of the University of Minnesota Hospitals were included in the clinical group. In random fashion, a list of 90 cards labelled either "A" (hydroxyzine) or "B" (no hydroxyzine) was made and given to the head nurse on the pediatric station of the Heart Hospital. As each child was admitted, she drew the next card from the list and premedicated him accordingly. Thus, only a few nurses had any prior knowledge of the child's premedication.

It has been the custom for several years at this center to give no anesthetic or analgesic medication before or during right heart catheterization. This has been motivated by a belief that the resting child in a waking state unimpaired by any respiratory depression is the best and safest subject for physiologic studies. Thus, 45 children in this study received hydroxyzine as a premedication while the remaining 45 did not.

A dosage scale for hydroxyzine was set up prior to beginning the study (Table I). This was based on previous experience in treating children with behavior disorders.[6] The first 52 patients were catheterized under this dosage schedule; the last 38 were catheterized employing a schedule which doubled previous doses.

All 90 children who were catheterized were proven to have congenital heart disease. Eleven of these had previously had open heart surgery for their maladies; the remainder had no history of cardiac surgery. The age range for the group given hydroxyzine was two months to fifteen years and for the group given no premedication two months to twelve years. There were no significant differences between the groups as regards age distribution or types of congenital heart malformations. No child was catheterized more than once during this study.

Results

The results of the first 52 catheterizations are shown in Table II. When preliminary evaluation revealed no significant differences between the treated and untreated groups, the dosage schedule was doubled for the last 38 children (Table III). With these larger doses there was a small but significant ($P > 0.05$) difference in the number of runs of three or more nodal premature contractions between the two groups; the difference favored the group premedicated with hydroxyzine. In no other category (including other types of premature contractions) was there any significant difference. Because of the relatively small number of subjects experiencing nodal premature contractions in each group, the final evaluation of the efficacy of large doses of hydroxyzine in the prophylaxis of this abnormality must await a trial with a larger group of subjects.

It is worthy of mention that no undesirable side effects were noted in the 45 patients given hydroxyzine.

Discussion

In 1958, Burrell[5] reported the use of hydroxyzine in 50 adult patients with cardiac arrhythmias. He claimed "excellent" results (complete restoration of sinus rhythm within 24 to 36 hours) in 30 of these patients. These fell mainly into two groups: those with ventricular extrasystoles and those with atrial fibrillation. Dosages ranged from 50 to 100 mg. per day given either orally or parenterally.

Salmons[8] too has reported success in the treatment of four adults with supraventricular tachycardias with hydroxyzine. However, he makes no mention of the number of clinical failures he has encountered during his experience with the drug. Ziffer[9] and Weil[10] have each treated small groups of patients with cardiac arrhythmias without notable success. In general, their dosages were at least as large as those used by Burrell, and the types and numbers of arrhythmias were similar. Of a total of 25 patients treated, only one satisfied Burrell's criteria of complete restoration of sinus rhythm. Twenty-two of the 25 patients showed no change in their electrocardiographic patterns after administration of hydroxyzine.

Ziffer[9] treated one patient with an acute myocardial infarction with oral doses of hydroxyzine in an attempt to prevent the development of auricular fibrillation. After several days on the drug, however, the patient did develop this arrhythmia. Weil[10] treated a patient with premature ventricular systoles occurring during cardiac catheterization as the catheter was passed across the pulmonic valve. He injected 37.5 mg. into the pulmonary artery through the catheter but was unable to modify or eliminate the extrasystoles.

Di Palma,[11] in a recent and extensive review of antiarrhythmic drugs, likened the cardiac effects of hydroxyzine to those of phenobarbital. That is, he considers the drug to have no specific effect on the myocardium; rather, its occasional success in decreasing or eliminating extrasystoles and supraventricular tachycardias rests purely on its sedative properties. The present data also indicates that hydroxyzine appears to lack prophylactic antiarrhythmic properties in the heart catheterization situation, although the use of large doses may decrease the occurrence of nodal premature contractions.

Summary

In order to evaluate the effectiveness of hydroxyzine in the prophylaxis of arrhythmias and conduction disturbances during right heart catheterization, a controlled blind study was set up. Ninety consecutive children with congenital heart disease were catheterized at the Variety Club Heart Hospital. Half of these received, in random distribution, hydroxyzine as premedication; the other 45 received no premedication.

Evaluation of the data obtained from continuous electrocardiographic monitoring of all patients included in the study by persons having no knowledge of the presence or absence of premedication reveals no significant differences in frequency of arrhythmias and conduction disturbances between the two groups with one exception: a slight but significantly smaller number of patients experienced nodal premature contractions during catheterization in the group given hydroxyzine.

The authors would like to acknowledge the invaluable assistance of the Pediatric house staff of the Variety Club Heart Hospital at the University of Minnesota; also the aid of Dr. Jacob E. Bearman, Head of the University's Division of Biostatistics, who assisted in the planning of this study and in its evaluation upon completion.

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Report of Four Cases

Primary Miliary Tuberculosis of the Liver

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SINCE tuberculosis in any of its forms can be effectively treated with drugs at the present time, it has become extremely important to be able to recognize tuberculous infection in any patient with an obscure fever and unusual clinical manifestations. Tuberculosis chiefly confined to the liver was first described by Bristowe in 1858. Since that time scattered references to this entity have appeared in the literature but no great attention was paid to it. There were several reasons for this attitude, among which were the difficulty of making the diagnosis without laparotomy, and the lack of any adequate therapy once the diagnosis had been made. At the present time early diagnosis is possible by the relatively simple and safe procedure of percutaneous liver biopsy, and prompt treatment can be instituted with antituberculous drugs.

The most recent review of the subject of primary miliary tuberculosis of the liver was made by Terry and Gunnar in 1957.[1] These workers report twelve cases of primary miliary tuberculosis of the liver that were encountered in a period of four years at Cook County Hospital in Chicago. All of the eight patients whose treatment was considered adequate recovered without sequelae. In their article the clinical aspects of the disease, the methods of diagnosis, the treatment and the prognosis were considered in some detail.

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Primary miliary tuberculosis of the liver is a condition in which there is hematogenous dissemination of tuberculosis to the liver with minimal involvement of other organs. Specifically excluded by this definition is the incidental involvement of the liver so common in far-advanced pulmonary tuberculosis and in generalized miliary tuberculosis. As in the Cook County report, no cases have been included in this study in which there was radiological evidence of pulmonary tuberculosis, miliary or other, except late in the disease when the infection had become generally disseminated.

Report Of Cases

The four cases described in this report were seen at the Minneapolis Veterans Administration Hospital between the years of 1951 and 1961. None of these were recognized ante-mortem.

Case 1:

J. B.: This 45-year-old white male was admitted December 26, 1957, confused and in acute respiratory distress. He had entered a private hospital on November 26 after a one-week illness manifested by chills, fever, vomiting and headache. He was started on penicillin and streptomycin with brief improvement, then developed jaundice and petechiae; shortly before transfer several areas of pulmonary consolidation were evident on X ray. In 1946 he had an orchiectomy and epididymectomy on one side and in 1952 on the other side for tuberculosis. He was a heavy drinker, consuming 20-30 bottles of beer per day for at least 5 years.

On admission the patient was confused. The temperature was 102.6° F, the blood pressure 115/60, and the pulse 140. There were jaundice and areas of petechiae on the skin. The breath sounds were absent in the left chest. Liver and spleen were palpable 4 to 5 fingerbreadths below the costal borders. There was 3+ edema of the lower legs.

The leucocyte count was 7,600 with 77% neutrophils, 19% lymphocytes. Hemoglobin was 12.1 gram%; sedimentation rate 82 mm.; serum albumin 2.0 gram%, globulin 4.2 gram%; total serum bilirubin 14.5 mg.%, 11mg.% direct. Cephalin flocculation 4+ in 48 hours, thymol turbidity 8.9 units. Sputum smears were negative for acid-fast bacilli. Pleural fluid culture showed hemolytic Staphylococcus, coagulase-postive. Smears were negative for acid-fast bacilli.

He was treated with erythromycin, chloramphenicol and adrenal cortical steroids. He died on December 31, 1957. The clinical diagnoses were: (1) Laennec's cirrhosis, and (2) Staphylococcal pneumonia.

At autopsy the liver showed many granulomas with caseation; no acid-fast bacilli seen.

In the lungs many caseous granulomas which contained acid-fast bacilli were seen.

Case 2:

R. R.: This 68-year-old white male was admitted October 12, 1953. He had a 40-year history of chronic bronchitis and cough. There was no history of tuberculosis. He had sustained a 30-pound weight loss in the three months prior to admission.

Physical examination revealed cachexia and cyanosis. The temperature was 97.2° F, pulse 32, blood pressure 136/66. There were bilateral basilar rales. The liver was not palpable.

The leucocyte count was 26,400 with 88% neutrophils; hemoglobin was 8.6 gram%. Smears of sputum were negative for acid-fast bacilli. Purified Protein Derivative No. 1 skin test was negative. Bronchial biopsy showed squamous cell carcinoma. He had several X ray treatments to the lungs before death on November 2, 1953.

Autopsy showed caseating granulomas in liver and spleen, but none in the lungs; squamous cell carcinoma of the lung was also found. No acid-fast bacilli were seen in the lungs or liver.

Case 3:

H. B.: This 65-year-old white male was admitted for the ninth time on August 14, 1951, for the treatment of congestive heart failure. The patient had a long history of hypertension. He had suffered a right hemiplegia in 1946 and had symptoms of cardiac decompensation from 1948. There was no history of tuberculosis

Physical examination revealed a blood pressure of 230/148 and pulse rate of 112. There was Grade III hypertensive retinopathy. The liver was palpable at the costal border. There were bilateral basilar rales and a Grade II apical systolic murmur. Vital capacity was 2.2 liters.

The leucocyte count was 12,000 with 82% neutrophils. The hemoglobin was 12.7 gram%, serum albumin 3.8 gram%, serum globulin 4.1%. He was treated with digitalis, low sodium diet and rest. He died suddenly on September 2, 1951.

Autopsy showed caseating granulomas in the liver; no acid-fast bacilli were seen.

Case 4:

A. A.: This 61-year-old white male was admitted for the second time on July 7, 1955, because of a two-week history of evening fever. In 1948, he had been given X ray therapy to the superior mediastinal area for what was thought to be a lymphoma; there was no tissue biopsy. In March 1954 the patient developed fever and weight loss; X ray showed a superior mediastinal mass. Thoracotomy was performed and a diagnosis of malignant thymoma was made. The mass was not excised. The Mantoux test was negative in 1954.

Physical examination showed a cachectic man. Blood pressure was 100/70, pulse 110, temperature 99.8°. The liver was palpable 4 cm. below the costal margin. There was 3+ pretibial edema.

The leucocyte count was 2,000 with 62% neutrophils. The hemoglobin was 14 gram%, sedimentation rate 30 mm, bromsulfalein retention 22% in 45 minutes, cephalin flocculation 4+ in 48 hours. Total serum bilirubin was 1.3 mag.%. Blood culture showed hemolytic Staphylococcus, coagulase positive.

The chest X ray showed a diffuse infiltration a few days later. Beginning on July 29 a course of nitrogen mustard was given because of persistent fever and right upper quadrant pain. He developed circumoral herpes simplex and a monilial infection. Gradual deterioration occurred with persistently elevated temperature. He died August 14, 1955.

Clinical diagnoses were (1) Malignant thymoma, and (2) Staphylococcal bacteremia.

At autopsy tuberculosis was not suspected from the gross findings. Microscopic examination showed granulomas with acid-fast bacilli in the liver, lung and spleen as well as the malignant thymoma.

Discussion

Only one of the cases presented had a history of previous tuberculosis. In the other three cases either no skin test was performed or the tuberculin skin test was negative. In only two of the cases were studies of the sputum carried out for Mycobacteria. Two of the cases had a malignancy and the part tuberculosis played in their demise is uncertain. One case had hypertensive cardiovascular disease which was probably the immediate cause of death. The fourth case offered a perplexing problem of metastatic thymoma and staphylococcal bacteremia. Most of the clinical and laboratory findings could be explained on the basis of these two diseases. Hence, tuberculosis was not suspected. The pathological findings of microscopic granulomas in the liver, spleen, and lungs as well as the clinical course, however, are compatible with generalized miliary tuberculosis. Nevertheless there are several features which point to primary miliary tuberculosis of the liver as the proper diagnosis. On admission the liver was palpable 4 cm. below the costal margin; the cephalin flocculation test was abnormal and the chest Xray on admission did not show diffuse disease. The later findings can be interpreted as evidence of terminal dissemination from the liver. Because this case had many complexities, the diagnosis of primary miliary tuberculosis of the liver may be somewhat tenuous. It is felt, however, that many of the criteria set down by Terry and Gunnar (vide infra) are fulfilled and that the case should be included in this report.

The symptoms reported by Terry and Gunnar were fever, lassitude, weakness, anorexia, weight loss, chills and drenching sweats. In all their twelve cases the Mantoux test was positive and in none of their cases was jaundice seen. In seven of their cases the diagnosis was made by liver biopsy. In half of the cases, the serum gamma globulin level was elevated above 1.5 gram%, and in these six cases the liver function tests were quite abnormal. The Cook County group considered the following features to be reasons for considering the diagnosis of primary miliary tuberculosis of the liver:

1. Pyrexia of unknown origin.
2. Enlarged liver, not necessarily tender.

3. Splenomegaly.
4. Episodes of arthralgia or skin eruptions.
5. A full abdomen contrasting with wasting elsewhere, with protein content of ascitic fluid above 4 grams per 100 ml.
6. Unexplained, moderate anemia and leukopenia.
7. Unexplained elevation of the serum gamma globulin level, especially with abnormal serum flocculation tests.
8. A positive Mantoux reaction.

They stated rather categorically that if it is impossible to exclude primary miliary tuberculosis of the liver as a diagnostic possibility, liver biopsy is indicated and it should be performed without delay if there are no contraindications. However, they point out that it is important to realize that it is not essential to perform the biopsy before starting therapy since recognizable tubercles remain in the liver for weeks after successful therapy has been instituted. The successfully treated cases at the Cook County Hospital received Isoniazid and Aminosalicylic acid; in the more serious cases these two agents were combined with Streptomycin.

Summary

Four cases of what is considered primary miliary tuberculosis of the liver are described. In none of these cases was the diagnosis suspected ante-mortem. A brief summary of the clinical findings, diagnostic criteria and treatment as described by Terry and Gunnar (1957) is given.

Reference

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ANACIN NOT A FOLK REMEDY

Red Owl Stores and Groves Kelco, a wholesale distributing firm, must pay all court costs totalling $19,190.15 stemming from the recent Minnesota Supreme Court decision involving illegal sale of 18 drugs, it was revealed.

This basic issue concerned the Supreme Court's ruling that 18 products, such as Anacin and Alka-Seltzer, were drugs and medicines.

The Supreme Court ruled that the 18 products were not "folk remedies but complicated drugs having toxic ingredients." This ruling determined that unlicensed sale of the products violates state law.

The state of Minnesota will be reimbursed $1,458.90, and the Pharmaceutical Association will be repaid $17,731.25 by Red Owl and Groves-Kelco in accordance with the taxation of costs by the Supreme Court.

Do not keep your kindness in watertight compartments: if it runs over a bit 'twill do no harm.—*The Motto Book*

He is the benefactor of mankind who makes two grins grow where there was only a grouch before.—*Elbert Hubbard*

KLUVER-BUCY SYNDROME

This is a behavior change after removal of the temporal lobes. It consists of (1) visual agnosia (psychic blindness, the loss of recognition of people), (2) changes in emotional behavior with loss of fear and rage reactions, (3) decrease in aggressive behavior, (4) hypersexuality, and (5) bulimia. (abnormal increase in hunger sensation satisfied only with large amounts of food).

I don't know of a better way to get interested in the study of medicine than to be obliged to weed long rows of onions on a hot day. Weeding onions allows plenty of time to decide what else you would rather do.

Blake F. Donaldson, M.D.
in Strong Medicine

The Cardiac Program in Minnesota

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Guided by the principles that the surgical advances for cardiac lesions should be translated into benefits for children, the Crippled Children Services began in 1956 to arrange diagnostic and treatment service for those children who had heart lesions amenable to surgery but whose parents were unable to provide the necessary care.

The promising results for heart surgery gave new hope for many children. Family physicians encouraged eager parents to avail themselves of the opportunity for cardiac care and surgery for their children. For a while the demands on one cardiac center required children to wait many months for open-heart surgery.

Administration

Arrangements were made by the Crippled Children Services for Minnesota children under 21 years of age to have the specialized diagnoses and treatment for their heart lesions at the University of Minnesota Hospitals and Mt. Sinai Hospital in Minneapolis and at the Mayo Clinic in Rochester. This included the provision for special nurses and for blood if the parents could not arrange for donors. The standards for these centers are those recommended by the American Heart Association. Inpatient hospital care only was provided at the University of Minnesota Hospitals until July 1, 1961; outpatient services at this center were added at that time.

Applications for treatment through the Crippled Children Services may be obtained from the county welfare department. A social worker will

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Table 1. Distribution of the children by county, sex, and hospital mortality, Minnesota Cardiac Program, April, 1956 — July, 1961.

County	Number	SEX		Hospital mortality
		Male	Female	
TOTAL	400	192	208	61
Aitkin	5	1	4	2
Anoka	7	3	4	
Becker	6	1	5	2
Beltrami	8	4	4	
Benton	1		1	
Big Stone	1	1		
Blue Earth	3	2	1	
Brown	2		2	
Carlton	3	3		
Carver	1	1		1
Cass	6	3	3	
Chippewa	3		3	1
Chisago	1	1		
Clay	5		5	
Cook	1		1	
Cottonwood	1	1		1
Crow Wing	1	1		
Dakota	6	3	3	
Dodge	5	4	1	
Douglas	4	2	2	3
Faribault	7	4	3	3
Fillmore	4	2	2	1
Freeborn	8	5	3	1
Goodhue	4	1	3	1
Hennepin	41	15	26	5
Houston	2	2		1
Hubbard	3		3	
Isanti	1		1	
Itasca	6	2	4	
Jackson	2		2	1
Kanabec	1	1		
Kandiyohi	9	6	3	1
Kittson	2	1	1	
Koochiching	2	1	1	
Lake O'Woods	3	3		
Lincoln	2	1	1	
Lyon	3	2	1	
Marshall	2	1	1	
TOTAL	400	192	208	61
Martin	9	6	3	
McLeod	1	1		
Meeker	3	2	1	
Morrison	1	1		1
Mower	7	1	6	1
Murray	2	1	1	1
Nicollet	1	1		
Nobles	5	4	1	2
Norman	4	2	2	2
Olmsted	15	7	8	
Otter Tail	6	3	3	2
Pine	5	1	4	2
Pipestone	2	1	1	
Polk	3	1	2	1
Pope	1		1	1
Ramsey	32	12	20	7
Redwood	4	1	3	1
Renville	4	1	3	3
Rice	1		1	
Rock	3	2	1	2
Roseau	2	2		
St. Louis	62	39	23	6
Scott	2	1	1	
Sibley	2		2	1
Stearns	7	3	4	
Steele	2		2	
Stevens	1	1		1
Swift	3	1	2	
Todd	5	2	3	
Wabasha	6	5	1	1
Wadena	3		3	
Waseca	2	2		
Washington	7	5	2	1
Watonwan	1	1		
Wilkin	2		2	
Winona	3	1	2	1
Wright	3	1	2	
Yellow Med.	6	2	4	

help the parents in completing the application form. A medical report is needed to complete the application.

Eligibility of the child for treatment is determined by the Commissioner of the Department of Public Welfare, and the parents are notified by the Crippled Children Services as to whether or not the child is accepted for care. It is necessary that the application be approved and that the necessary authorizations be issued prior to service.

When the child has been treated at a cardiac center, the Crippled Children Services assigns the patient to that center. Other patients are assigned in rotation to centers as near to their homes as possible, but consideration is given to the medical needs of each child and to the preferences, if indicated, of the family or referring physician.

Any physician can make arrangements for a patient on an emergency basis by telephoning or wiring the Director of the Crippled Children Services.

Findings

From the beginning of the cardiac program in April, 1956, to July 1, 1961, 400 children from 76 of the 87 counties in Minnesota received care (table 1). Hennepin, Ramsey, and St. Louis

Table 2. Distribution of children served by fiscal year, sex, hospital mortality, surgery, and expenditure, Minnesota Cardiac Program, April, 1956 — July, 1961.

Fiscal year	Number of children	SEX		HOSPITAL MORTALITY		SURGERY		
		Male	Female	Number	Percent	Number	Percent	Expenditure[1]
1955-56	5	1	4			4	80.0	$ 5,772.56
1956-57	49	19	30	9	18.3	39	79.6	14,014.26
1957-58	58	22	36	6	10.3	32	55.2	30,696.49
1958-59	39	23	16	8	20.5	28	71.8	26,538.94
1959-60	129	65	64	19	14.7	68	52.7	54,709.58
1960-61	198	101	97	22	11.1	92	46.5	104,519.85

[1] Expenditure is exclusive of insurance payments.

Counties referred the most children. There were no referrals from eleven counties, and the number of children in each county receiving care was not proportional to the population of the county.

Females (52 percent) predominated; however, boys exceeded girls during the last three years (table 2). The percentage of Indian children in the total group was 1.2, which happens to be the percentage of Indians in Minnesota's population.

The number of children served in each fiscal year increased from five to 198 during the period studied (table 2). The program was available for only three months during the first fiscal year. Money was available to meet the demands only during the last two fiscal years.

The number of children who received surgery relative to those receiving care during each fiscal year varied from 46.5 to 80.0 percent (table 2). During the entire period, 65.4 percent of the children had surgery. This high percentage undoubtedly reflects the recent advances made in cardiac surgery and also the fact that only inpatient hospital care was provided at one cardiac center.

The hospital mortality for surgical and nonsurgical patients varied from 0 to 20.5 percent (table 2). During the entire period, 64 children (16 percent) of the total of 400 died while receiving care at a cardiac center. This mortality rate is higher than the 8.3 percent listed for all the regional centers in 1952-56 (table 2). Fifty-three (20.3 percent) of the 261 children having surgery died at or shortly after surgery. This high mortality undoubtedly can be attributed to the serious complex cardiac lesions that many of the children had.

The average age of the children on their first admission to a cardiac center was six years. The largest number (21.5 percent) for any age group was seen in the first year of life. The large number of infants who received care is due to the marked symptoms that many of them had and the early referral by the family physician to a cardiac center.

The most common primary diagnoses for the 400 children were interventricular septal defect, patent ductus arteriosus, tetralogy of Fallot, and malformations of the heart, such as pulmonary stenosis (table 3). In case two or more diagnoses were given, only the primary diagnosis at surgery or catheterization was used. Five percent of the children had normal hearts.

The hospital mortality for surgical and nonsurgical patients showed considerable variation for the different diagnoses (table 3). The mortality was highest for tetralogy of Fallot and malformations of the circulatory system such as transposition of the great vessels.

Among the 86 infants under one year of age, 43 (50 percent) had surgery. Twenty-one had closed-heart surgery, and 22 had open-heart surgery. The survival rate for the infants having closed-heart surgery was 66.7 percent, and for those having open-heart surgery 31.8 percent.

Table 3. Distribution of children served by diagnosis, hospital mortality, and surgery. Minnesota Cardiac Program April, 1956 —July, 1961.

	NUMBER		HOSPITAL MORTALITY		SURGERY				
							HOSPITAL MORTALITY		Average hospitalization, days
Diagnosis	Total	Percent	Number	Percent	Number[1]	Percent	Number	Percent	
Tetralogy of Fallot	44	11.0	14	31.8	30	68.2	12	40.0	25.7
Patent ductus arteriosus	54	13.5	3	5.5	51	94.9	3	5.9	15.3
Interventricular septal defect	104	26.0	13	12.5	62	59.6	12	19.4	21.2
Interatrial septal defect	35	8.8	8	22.9	31	88.6	7	22.6	23.2
Other malformations of heart	84	21.0	11	13.1	54	64.3	6	11.1	19.4
Coarctation of aorta	21	5.3	3	14.3	20	95.2	3	15.0	18.4
Other circulatory malformations	25	6.2	12	48.0	14	56.0	10	71.4	23.0
Mitral stenoses—rheumatic	5	1.2			1	20.0			15.0
Diagnoses deferred	3	0.8							
Normal heart	20	5.0							

[1] Two children had two cardiac operations.

During this period the Crippled Children Services spent $236,251.68, exclusive of insurance benefits. The number of insurance payments increased during this period. During the last fiscal year, insurance payments were made for 42.4 percent of the children, almost all of which were made for the hospital and medical care while the child was hospitalized. Rarely was any insurance payment made for outpatient care.

The average cost of hospital and medical care, including insurance payments when available, for a catheterization was $360, for closed-heart surgery $800, and for open-heart surgery $1,750. The range of cost for closed-heart surgery varied from $245 to $1,635, and that for open-heart surgery from $450 to $4,250. The large variability for the cost of open-heart surgery arose partially from the average increased length of hospitalization, which was five days beyond the 15 days needed for closed-heart surgery, but mainly from complications that prolonged hospitalization and also the need for special nurses. This high variability has made it extremely difficult to predict the cost of medical care for those children needing open-heart surgery.

Conclusion

From the beginning of Minnesota's program for cardiac lesions amenable to surgery from April, 1956, to July 1, 1961, 400 children received diagnostic and treatment services at three cardiac centers when their parents were unable to provide the necessary care. During this period 65.4 percent of the children had surgery. The hospital mortality rate for surgical and nonsurgical patients was 16 percent, and for surgical patients only 20.3 percent. The mortality rate was highest for the children with tetralogy of Fallot and circulatory malformations such as transposition of the great vessels.

The average cost for catheterization was $360, for closed-heart surgery $800, and for open-heart surgery $1,750. The wide variability in the cost of open-heart surgery makes it difficult to predict the total expenditure.

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The Past Present and Future of Sprue in Puerto Rico[*]

RAMON M. SUAREZ, M.D.[†]
Puerto Rico

It is usually the passing years that awaken one's interest in history; in fact, it has been suggested that such interest is pathognomonic of old age. I am not yet ready to accept this implication. But to paraphrase Jacobi — Just as one can never understand the structure of one's country without knowledge of its history, nor the development of the body without knowledge of the embryo, one can never become master of one's profession without knowing the history of the science or art from which it sprang.

The seed of our local knowledge of sprue was planted in Puerto Rico in 1908 by Colonel Bailey K. Ashford, at that time a young medical officer in the U. S. Army. It was the first time that sprue had been recognized as such on this side of the Atlantic. Ashford called it the "rich man's anemia" to differentiate it from the "anemia of the jibaro" (peasant), or the hookworm anemia which Ashford himself discovered.

Historical Aspects

Sprue, also known as psilosis, tropical diarrhea, tropical apthae, Cochin Chine diarrhea, and Ceylon sore mouth, was discovered in 1669 by a Dutchman named Ketelear; later, it was described by Hillary, in Barbados, in 1759. The name "sprue" comes from the Dutch word "sprouw," the term given by Ketelear to a clinical picture observed among the Belgians, characterized by aphthous inflammation of the buccal mucosa and bulky diarrhea.

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In his first definition of sprue, Manson described it as "a chronic, remittent, catarrhal inflammation of all or part of the intestinal canal, of insidious onset, affecting principally Europeans who live or have lived in tropical or subtropical climates." Later, Manson-Bahr described it as "a strange and dangerous type of chronic inflammation of the mucous membrane of the alimentary tract. Although a disease of warm climates, it can be seen also in temperate climates, but, of course, only in those who have previously lived in tropical regions."

Thus, sprue was originally considered to be essentially a peculiar inflammation of the alimentary canal. It was later shown in tissue sections and by X-ray studies that the jejunum was the part of the intestine mostly affected by the inflammatory process.

Sprue was at first thought to be strictly a tropical disease. Although it is more frequent in the tropics, it is no longer considered a tropical disease but rather a universal or cosmopolitan one. It is most prevalent between latitudes 40 degrees north and 20 degrees south; it is endemic in China, India, Malay, East Indies, West Indies, the southern part of the United States, Central and South America, and Queensland. It is rarely found in the tropical zone of Africa, but it has been seen in Ceylon and in the Himalayan regions, with temperatures similar to those of Europe.

Frequency

The number of cases of acute, florid sprue has diminished greatly in Puerto Rico; this may be due to considerable improvement in the diet of the Puerto Rican population, to the extensive use of liver extracts, folic acid and vitamin B^{12}, or to unknown reasons. In 1924 Ashford[1] reported having studied 2200 cases in 15 years; I[2] reported studies on 150 cases in 1938; and Rodriguez-Molina[3] recorded 100 cases in 1941. In 1957, however, Perez-Santiago and Butterworth[4] were able to document only 79 cases in three years, and some of their cases already had been reported. The vital statistics for Puerto Rico compiled by the Department of Health showed in 1933 a total of 161 deaths attributed to sprue, a death rate of 9.8 per 100,000 population; in 1955, there were only nine deaths, with a mortality rate of 0.4 per 100,000.

Economic Factors

Contrary to statements in textbooks and in articles in the literature, including Ashford's, the majority of my patients, some 400 cases through the past 30 years, came from the underpaid, poorly nourished, working classes.

Etiology

Ashford's first paper[5] on sprue was published in 1913. At that time he had isolated *Monilia (Candida) albicans* from scrapings from the tongue and feces of sprue patients. He began intensive clinical and experimental investigations on the possible relationship between this fungus and the disease, which culminated in his advocating, with rather wide acceptance, the use of an autogenous vaccine in the treatment of sprue. His enthusiasm and the apparent accuracy of his studies had such effect on medical thought on this side of the Atlantic that, even today, some physicians look upon sprue as intestinal moniliasis.

However, Ashford's enthusiasm for the moniliasis theory of sprue did not preclude his looking into other possible routes to a better understanding of the disease. In 1916 he wrote on the dietetic treatment of sprue,[6] and in 1922 he published his observations on the concept that sprue is a mycosis superimposed upon a state of deficiency of certain essential food elements.[7] The diet that he prescribed in 1921 has been used successfully in hundreds of cases during many years at the School of Tropical Medicine and the University Hospital; it is the diet that, with but minor modifications, I still use today.

The nutritional factor in sprue was later strengthened by the studies that Castle and Rhoads and their co-workers[8] carried on in Puerto Rico during 1931. After careful study of the diet of patients who had sprue, they confirmed a deficiency in animal proteins and possibly in all foods known to contain the "extrinsic factor," such as meat, eggs, milk and whole wheat. Previously it had been shown that the ordinary diet of the Puerto Rican population was lacking in vitamin A and was poor in its content of calcium, phosphorus and fats, but rich in carbohydrates; although it contained sufficient proteins, these were of relatively poor biologic quality. Interestingly enough, this diet proved to be richer in iron than was the average diet of the continental American.

The studies carried out by Castle and associates in Puerto Rico stimulated much interest in the hematology of sprue and its treatment with intramuscular injections of liver extract. Up to that time, my associates and I had administered by mouth only the powdered liver extract, as well as aqueous preparations of liver. Parenteral administration, although rather painful, proved to be much more rapid and even dramatic in its effect.

We thus came to think that sprue was perhaps primarily a disease of the hematopoietic system. Time leads us to believe that perhaps we were mistaken.

Serra[9] was the first in Puerto Rico to suggest a relationship between sprue and pernicious anemia. Ashford[10] wrote a little later on the differential diagnosis between sprue and pernicious anemia.

Pathology

The meticulous pathologic studies of Koppisch in 16 cases of sprue have been quoted by several authors.[6,7] Koppisch reported the almost complete depletion of adipose deposits and the extreme atrophy of all organs, particularly the heart muscle, with brown atrophy of the liver and spleen. He found the same changes in the stomach and intestines that have been recently described in biopsy specimens of the intestinal tract. In 50 per cent of the cases, Koppisch found shortening and dulling of intestinal vilii, with dense infiltration of the tunica propria with plasma cells and lymphocytes; in the other 50 per cent, he found only occasional edema of the submucosa. In five carefully studied cases, he found no evidence of degeneration of the spinal cord. The extreme rarity of neurologic findings in sprue and their prevalence in pernicious anemia constitute an important differential diagnostic feature between the two diseases.

Shortly after Ashford's death, we were visited at the School of Tropical Medicine by Professor F. M. Hanes, then Chairman of the Department of Medicine at Duke University, who was interested in sprue because he had seen cases of this disease in North Carolina. He initiated the many studies that were carried out in America on fat metabolism in sprue, the "era of steatorrhea." He believed that steatorrhea was the "sine qua non" in the diagnosis of sprue.

Asenjo[11] conducted extensive studies on the digestion, absorption and metabolism of fats in sprue. Between 1944 and 1950 he studied the excretion of fats in the stools in 41 cases of sprue, as compared to fat elimination in 19 normal subjects. The average fat excretion in patients who had sprue was 12.5 gm. per day.

In his last publication (1958), Asenjo and co-workers[12] concluded that in the sprue cases studied, the steatorrhea was of exogenous origin and caused by deficient absorption; there was no increase of endogenous excretion. Under a very low-fat diet, the amount of fat excreted was no greater than in normal subjects. Their studies also showed that the ingestion of gluten had no effect on the amount of endogenous fats excreted by sprue patients.

Investigative Studies

Our investigations at the School of Tropical Medicine seem of particular interest. Some of this work was never published.

Race

Our studies show that sprue is extremely rare in the pure Negro. Among 150 patients, 121 were white, 26 were mulattoes, and only three were Negroes. There is, therefore, a definite susceptibility to sprue in the Caucasian race.

Financial Status

Our studies, as have those of other investigators in recent times, have shown that sprue is more frequent in the under-privileged classes, although it is also occasionally found in the higher socioeconomic stata of the social group.

Heredity

After careful analysis of reliable histories in a number of cases of sprue, we concluded in 1938 that there was a hereditary factor in the disease. We are even more convinced of it today, just as we are convinced that there are racial, nutritional and, perhaps, geographic factors involved.

Treatment

Liver Extract

Even though it was the opinion of many observers that the crude liver-extract preparations for parenteral use were more effective in the treatment of sprue, I[2] noted in 1938 that the concentrated liver preparations were equally or more effective and had the advantage of being much less painful. It was learned later that the anti-pernicious-anemia effect in liver extract was due exclusively to its cobalamine content, and that the crude liver extract preparation contained 4.21 micrograms of folic acid per milliliter, while the concentrated preparation contained 200 micrograms per milliliter.

Folic Acid

Probably the most important contribution that my associates and I made to the solution of the sprue problem in Puerto Rico was the introduction of folic acid. On December 1, 1943, we began its use with some folic acid brought by Dr. Tom D. Spies. We promptly saw its effectiveness. This vitamin, relatively inexpensive and effective when administered orally, was the solution to a grave social, medical and economic problem. The first patient on whom we used folic acid was a 30-year old white woman. The effect of the treatment was so dramatic that we had the feeling of returning Lazarus to life. Today this woman enjoys relatively good health and has served as a subject for jejunal biopsy.

Folic and Acid Derivatives

In 1947 and 1948, we[13,14] assayed the effect on sprue of various folic-acid conjugates, including Bc, separated from yeast by Pfiffner and associates in the Parke, Davis & Co. Research Laboratories, and pteroyldiglutamic acid, or diopterin, obtained from the Lederle Laboratories. All patients responded to the oral parenteral administration of these conjugates in direct proportion to their content of folic acid. One patient receiving diopterin (50 mg. by mouth) developed a full-blown picture of combined degeneration of the spinal cord, while the hematologic picture remained normal.

Formyl Folic Acid

Our therapeutic trial of this member of the folic acid family was never reported. With oral doses of 5 mg. daily in seven cases of sprue, we obtained a maximal hematologic response in every instance.

Folinic Acid

In August, 1950, we treated our first patient with sprue by means of folinic acid, also known as the "citrovorum fraction," or "leucovorin." In January, 1951, we treated a second patient.[15] Both patients are of special interest. In spite of receiving only five injections of folinic acid on five successive days, each injection being the equivalent of 3 mg. of folinic acid (20,000 units), and in spite of the fact that the patient kept taking an inadequate diet and showed no reticulocyte response at any time, this first patient showed clinical and hematologic improvement up to the time of dismissal, 35 days after initiation of treatment.

The second case is even more interesting. A 65-year old white woman had full-blown acute sprue, with free hydrochloric acid in her gastric juice. Neurologic examination showed a Romberg sign, inability to walk in a straight line, absent Achilles reflex, greatly diminished patellar reflex, moderate loss of sense of position of toes, moderate loss of vibratory sensation up to the knee, and normal touch and pressure senses. We administered 3 mg. (20,000,000 units) of the citrovorum fraction daily for 26 days. During the second week of treatment the patient experienced improvement in the numbness in her toes, of which she had complained, and was able to walk in a straight line; she displayed a normal sense of position and improvement in vibratory sense. The absent or diminished Achilles and patellar reflexes persisted on the 34th day of treatment. Thus, folinic acid not only failed to intensify the neurologic abnormality in this case of sprue but also brought about actual improvement.

Lyman and Prescott[16] reported in 1949 that the *Lactobacillus leichmannii* fraction, or vitamin B_{12}, is alkaline, while the citrovorum fraction is strongly acid; these fractions or substances can thus be separated by electrolysis. Jukes and co-workers[17] reported later (1950) that *Lactobacillus leichmannii* apparently produces the citrovorum fraction in the presence of folic acid; it can also produce certain desoxyribosides, namely guanine, hypoxanthine, adenine and cytosine, if Vitamin B_{12} or thymidine is added. *Leuconostoc citrovorum* can synthesize its own vitamin B_{12} out of its precursors, and, under the influence of vitamin B_{12}, it is capable of synthesizing the guanine, hypoxanthine, adenine and cytosine desoxyribosides. It can synthesize thymidine only if the citrovorum fraction is added. I suggested in 1951 that these substances might have a common effective factor still unknown, and that the citrovorum fraction might thus not bring about or intensify neurologic changes in sprue and pernicious anemia as folic acid does.

Routes of Administration

Having shown the effectiveness of vitamin B_{12} given by intramuscular and intravenous injection in sprue, my associates and I investigated the effects of its oral, sublingual and intramarrow administration.[18,19]

Oral

In oral doses of 20, 50, 100 and 500 micrograms, the crystalline vitamin B_{12} had no hematopoietic effect whatever. A dose of 5000 micrograms did bring about a maximal reticulocyte response in two or three patients, and we obtained a good response in one or two patients with a dose of 3000 mircograms.

Sublingual

The daily sublingual administration of 25 micrograms of crystalline vitamin B_{12} brought about no response in several cases of sprue in relapse, while its intranasal administration likewise proved ineffective in a smaller number of cases.

Bone Marrow

We tried to determine whether vitamin B_{12}, when brought into direct contact with the immature cells that are precursors of adult erythrocytes, would have any effect on the rapidity of maturation. We injected minimal amounts (1 microgram) into the bone marrow at the iliac crest, and 24 hours later aspirated bone marrow from the same spot where the vitamin had been instilled. This sample was compared with the one obtained before instillation and with additional samples obtained 24 hours later from both iliac crests. There was a diminution of megaloblasts in the specimens obtained from both sides after instillation of the vitamin in one side.

The injection of 15 micrograms of the vitamin elicited a pronounced response in the normoblasts, an effect proved to be exactly the same at the site of injection and also in the sternal marrow. After the injection of 90 micrograms into the sternal marrow, the effect was systemic rather than local. In 48 hours the megaloblasts diminished from 25.8 per cent of the total erythrocytes to only 6.6 per cent, while the normoblasts increased from 4.4 to 7.0 per cent. On the eighth day no megaloblasts were found in the bone marrow, while the normoblasts were increased to 33.4 per cent. Not finding any difference between the sternal and the distant iliac-crest marrow, we concluded that the hematopoetic effect of vitamin B_{12} is dependent on a complex biochemical process and not merely on direct local action on the megaloblasts.

With Meyer and others,[20] I studied the effect of the oral administration of vitamin B_{12} and folic acid in minimal doses, under the theoretic assumption that the combined effect of both vitamins was greater than that of either vitamin alone in equal or even larger doses. We[21,22] later reported the results of investigations on the absorption of vitamin B_{12} tagged with radiocobalt when administered by mouth in six cases of sprue; the fecal excretion of radioactive substance was so variable and erratic that we could not arrive at any conclusions.

Antibiotics and Hormones

Some investigators have reported good results in the treatment of sprue with penicillin at first and later with other wide-spectrum antibiotics. My own experience, although limited, has not corroborated these findings. Neither could I favor the use of adrenocorticotropin (ACTH) or of cortisone and its derivatives. These hormones have a profound metabolic effect; their euphoric and antiphlogistic effects can easily give rise to the impression of an unreal beneficial effect on the part of both patient and observer. Although with their use I did obtain mild reticulocyte responses and systemic improvement during the first few days of treatment, I could not avoid the conclusion that neither the antibiotics nor these hormones were effective in the treatment of sprue; their prolonged use may, on the other hand, be harmful.

Malabsorption Syndrome

I dislike the term "malabsorption syndrome" because it only reflects ignorance of more specific physiologic mechanisms. What is called "malabsorption" could well represent such factors as poor or incomplete digestion, poor assimilation, poor utilization, defective enzymatic action, defective action of vitamins in their roles as coenzymes, changes in the cell-wall barrier, and alterations in the transport mechanisms.

In this case, instead of several symptoms being grouped to form a disease picture or a syndrome, a single symptom, that of poor absorption, has been used as a nucleus around which to group no less than 14 distinct clinical entities, many of them well-defined disease processes, having nothing in common among them, such as sprue, Whipple's disease, malignant carcinoid, intestinal polyposis, certain collagen diseases, gastrocolic fistula, regional enteritis, intestinal or mesenteric tuberculosis, Hodgkin's disease, and the aftermath of radical gastric resection.

With the advent of the xylose absorption test, the suggestion has been advanced that the glucose absorption test be abandoned because a rather large number of normal persons give a flat absorption curve. I never have used the glucose absorption test to distinguish between sprue patients and normal persons, for which no laboratory aid is needed, but rather to distinguish between the steatorrhea of sprue and that of pancreatic origin. Steatorrhea with a "diabetic" glucose tolerance curve, in the absence of hepatic dysfunction, means pancreatic disease; I have never seen a "diabetic" glucose tolerance curve in sprue. On the other hand, a low absorption curve of xylose only means that there has been little absorption, but by no means is it indicative of sprue. This test is not infallible, and hepatic and renal diseases may bring about abnormal results.

I also object to the use of such diagnostic terms as "tropical sprue" and "nontropical sprue." The patient who exhibits the clinical picture described by Rodriguez-Molina[3] and the few positive laboratory findings pointed out by Hernandez-Morales and me[23] has sprue and nothing else, whether he lives in Belgium, New York or Puerto Rico. If only on historical grounds, the term "sprue" should be reserved for cases of steatorrhea with megaloblastic bone marrow not exhibiting a lack of Castle's intrinsic factor and regularly responding satisfactorily to folic acid or vitamin B_{12} or both. Other forms of steatorrhea of unknown cause, especially those with nonmegaloblastic bone marrow, or those failing to respond to folic acid or vitamin B_{12}, should perhaps be designated as "idiopathic steatorrhea" or "adult celiac disease."

The Future

A pronounced diminution has occurred in the number of cases of sprue in Puerto Rico during the last two or three decades, a period during which the island has made remarkable social, economic, cultural and nutritional progress. I firmly believe there is a definite relationship between this progress and the decrease in incidence of the disease.

The majority of patients who have sprue can be cured or greatly improved by administration of folic acid or vitamin B_{12} or both, and an adequate diet rich in protein and low in fats and carbohydrates. This seems to indicate that the principal cause of sprue is a lack of one or both of these vitamins. But is this the one and only cause?

I pointed out more than 20 years ago that the inadequate diet of those who years later develop sprue is the same inadequate diet to which our anemic rural dwellers who suffer from uncinariasis have also been submitted for years. Why the different clinical and hematologic pictures? Why does one find in sprue a macrocytic, hyperchromic anemia with megaloblastic bone marrow, even if he also has a moderate or even a massive uncinarial infection? And why does the uncinariasis patient, even with diarrhea, have a typically iron-deficiency, hypochromic anemia? Is it not obvious that there must be a factor other than deficiency or nutrition?

Future students have before them horizons so distant that they are scarcely discernible, but fertile fields are there, either unexplored or barely scratched. May I urge you to reach them over the roads of heredity and genetics, of enzymology, and over that green road — green, because it has been hardly trod — of the "inborn errors of metabolism." On one of these paths, the solution to the still unresolved problems of sprue will surely be found.

Summary

The term "sprue" should be reserved for a deficiency state of unknown cause related to faulty absorption of folic acid and vitamin B_{12}. While the hematologic picture in sprue is indistinguishable from that in pernicious anemia, there is no lack of gastric intrinsic factor, and neurologic complications are extremely rare. The disease is characterized by uniformly good response to folic acid or vitamin B_{12} or both. There are cases of "idiopathic steatorrhea," or perhaps better "adult celiac disease," refractory to such treatment and commonly nonmegaloblastic. In the latter, the anemia is of a more heterogeneous character, more often with normoblastic bone marrow; it is normocytic or microcytic and hypochromic in type, and commonly is refractory to folic acid or vitamin B_{12}. While in this group of cases, sensitivity to gluten is of great etiologic significance, its relationship to sprue as seen in Puerto Rico is doubtful.

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The hottest fires of Hell are reserved for those men who, when faced with a moral crisis, remain neutral.—Dante's Inferno

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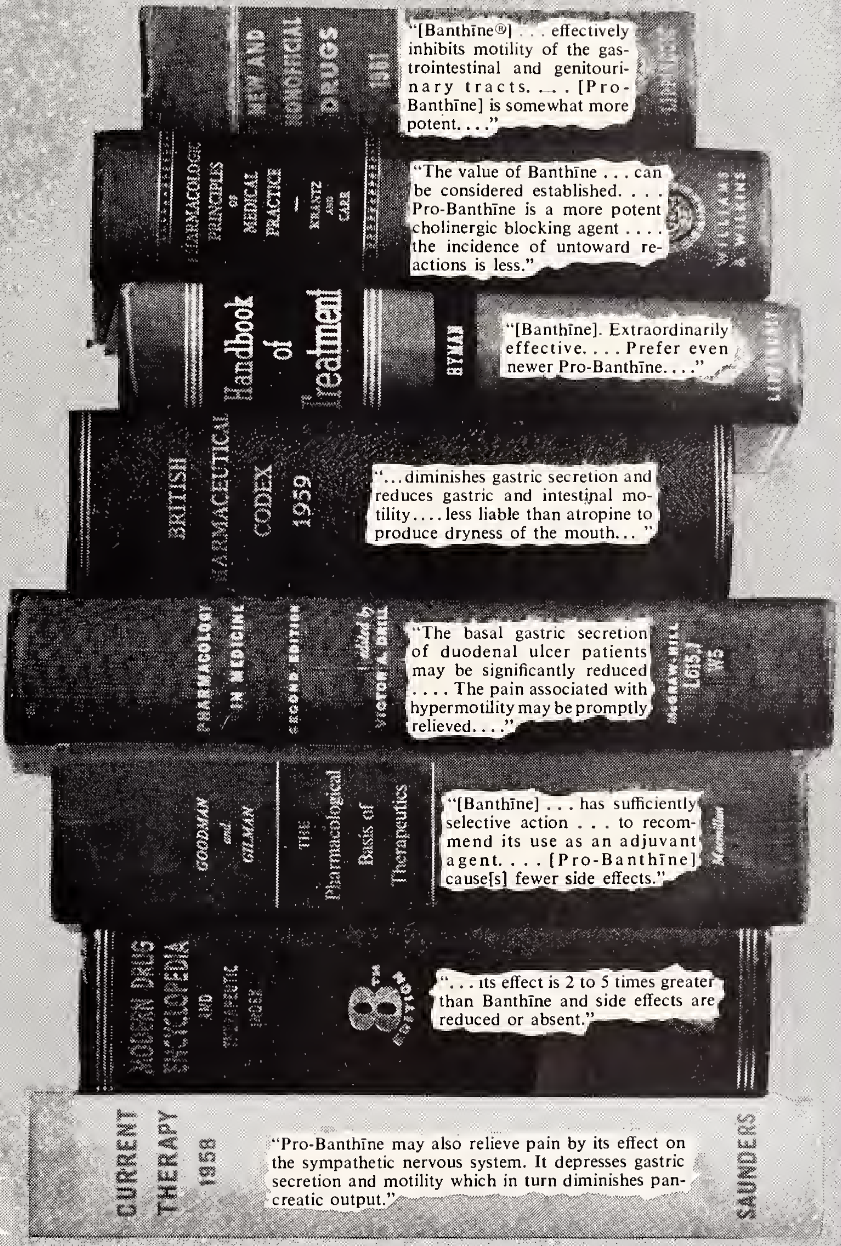
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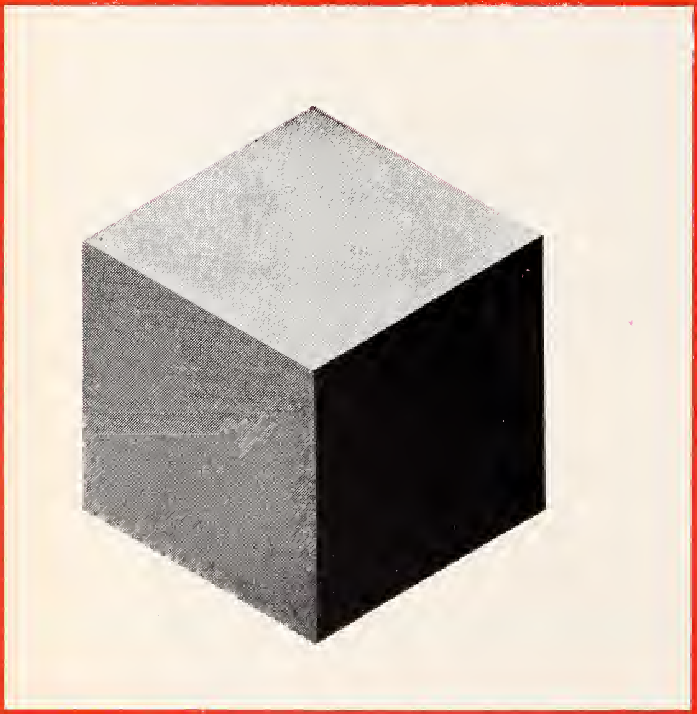

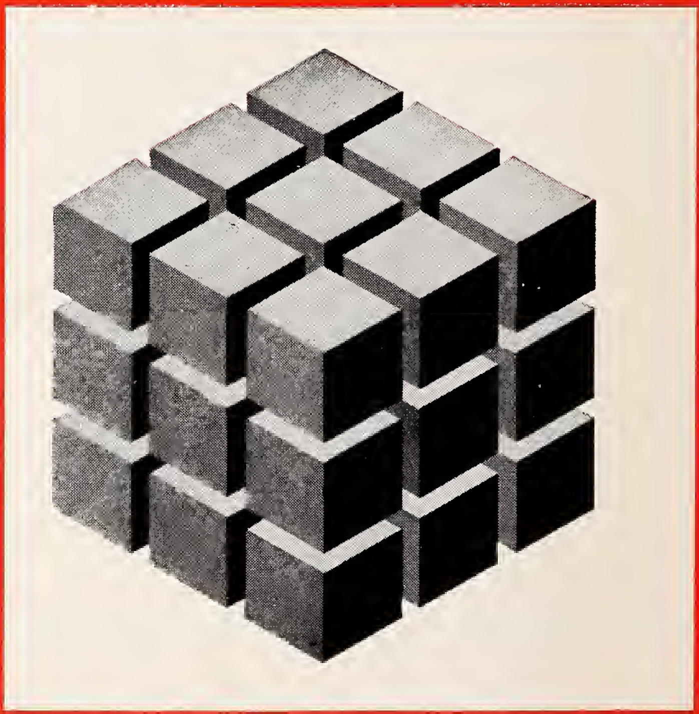

Editorials

Gangrenous Cholecystitis Complicating Surgery

Acute cholecystitis developing in the early postoperative period following surgical treatment of disease unrelated to the biliary system occurs more commonly than is generally appreciated. Only sporadic case reports were available until 1947 and again in 1956 when Glenn reported a total of 35 cases observed over a period of 23 years. Since then others have reported cases of acute cholecystitis which occurred postoperatively. The predominance in elderly patients is indicated by the fact that approximately 85 of the reported cases were over 50 years of age. Gullick has reinforced the theory that symptoms may occur in hours or days following the ingestion of food after a period of postoperative fasting by demonstrating reoentgenologically the postoperative evacuation of the gallbladder following food ingestion, in 40 male patients without symptoms of gallbladder disease.

Evacuation of the gallbladder in man is controlled by a hormone produced from intestinal mucosa when food substances, particularly fats, are ingested. This hormone, cholecystokinin, was first demonstrated experimentally by Ivy and Oldberg in 1928. *Ingestion of food of high fat content, after postoperative fasting is thought to cause contraction of the gallbladder mediated by this hormonal mechanism.* Should stones be present in a gallbladder, lying inactive during the postoperative fasting period, forcible contraction with the first food stimulus might easily cause impaction in the ampulla, obstruction, and consequently acute cholecystitis. In the gallbladder without stones, stagnant and inspissated bile occurring after operation may also be the cause of obstruction and acute cholecystitis in a similar manner.

The What's Your Diagnosis case, appearing on page 801, is an excellent example of this condition developing following a gastrectomy. The diagnosis may prove difficult.

Beni Katz, M. D.*
Reuben Berman, M.D.
Minneapolis, Minn.

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*Surgical Resident, Mt. Sinai Hospital, Minneapolis, Minn.

The Saskatchewan Medicare Controversy

Much interest has been generated in U. S. medical circles by recent developments in the Saskatchewan Medicare controversy. This observer was in Saskatchewan during the first week of the doctors' refusal to work under the government plan, and the following are some of his impressions:

Efforts at Arbitration

The attitudes of the provincial government and of the physicians were clear. After a year of arbitration the government said: "The act must stay, but we can discuss possible changes"; while the physicians said: "The act must be repealed or we won't talk at all." There were the inevitable and frequent radio and television broadcasts by the opposing sides, demonstrating only that the government and the physicians were no longer on speaking terms. The American news media told stories of short staffed emergency crews, of importation of British physicians, of threats of violence, and of many other developments during the crisis; but some of the basic issues in the dispute have been de-emphasized or omitted from the reports to the American public.

It is, of course, regrettable that the arbitration efforts were unsuccessful; but in the light of some of the events leading up to the breakdown, the impasse seemed inevitable. About ten years ago the Canadian government offered to pay 50% of the cost of any compulsory provincial hospitalization plan similar to the one already in effect in Saskatchewan. Individually, the provinces established such programs, and by 1961 every province had a program in effect. Actually, these provincial plans were combined hospital and medical-care plans, since they included the serv-

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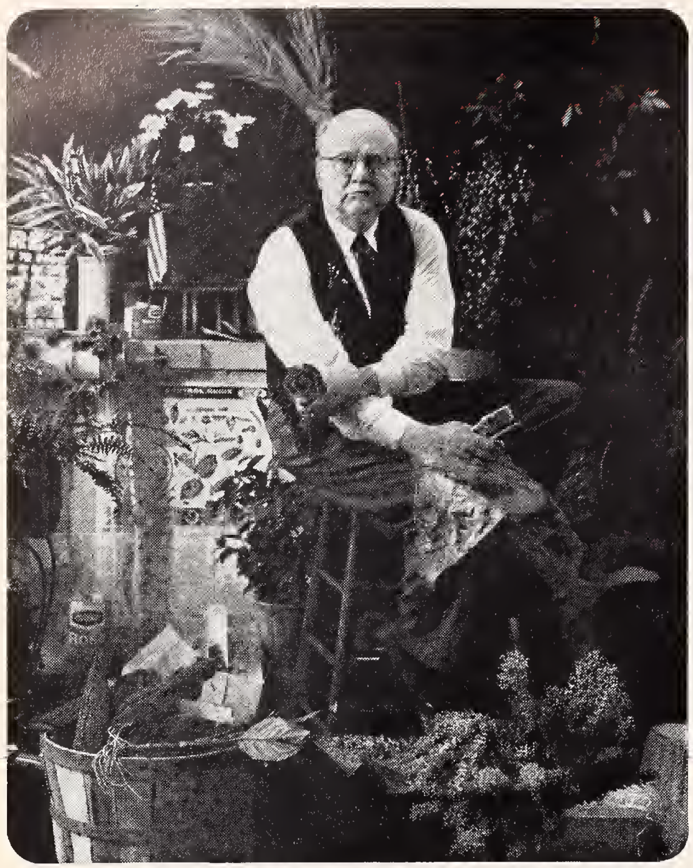
when occupational allergies strike



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The next step, also pioneered in Saskatchewan, was destined to bring about the present crisis. In 1961 the provincial government of Saskatchewan campaigned and, on the strength of its Medicare proposal, was re-elected by a minority of the total vote. At that time the physicians strongly advocated the use of existing insurance plans with government aid only on a basis of economic need. Their protest was ignored, the act was passed, and on July 1, 1962 the plan went into effect.

Breach of Faith

The physicians had long claimed a breach of faith by the government, since the public had been assured, prior to the election, that a Medicare plan would be enacted only on a basis acceptable both to those rendering and to those receiving the service. This fact has been de-emphasized in the discussions of the dispute by the U. S. news media, and herein lies the basis for a distrust of the government by the physicians and by many citizens of the province. To these people the implementation of the controversial program was a demonstration of Big Government in action. The dispute thus became an impasse of distrust.

The Power of the Government

Another key issue seems to be not the acceptance of a province-wide medical insurance plan but rather that a government commission was to enjoy "discretionary powers" concerning payment of bills. The government had stated repeatedly prior to enforcement of the act that physicians could practice outside the act, i. e., receive payment for services directly from patients, who could then apply for reimbursement from the commission. This, however, would still bring both patient and doctor under control of the act, since the "discretionary powers" of the commission were neither limited nor defined.

The Canadian Medical Association has pledged support to the physicians' stand and has recently declared that the Medicare act "speaks of regulations prescribing the terms and conditions under which doctors may provide services to patients, of regulations respecting the maintenance and improvement of the quality of services, and of scientific and technical matters relating to the care and treatment of patients. This represents complete legislative control over all aspects of the practice of medicine." Such control the Canadian medical profession is not prepared to accept.

For at least a year prior to the enforcement of the plan, wide publicity had been given to the reports that many of the most qualified physicians would leave the province permanently rather than work under the plan. This was not a simple threat by these physicians of refusal to work, but rather a declaration of freedom to practice their profession in an area where the only controls over their work would be based on their competence and ethics. Whether or not such action constitutes a "strike" is debatable. Equally difficult to appraise is the effect the Saskatchewan dispute will have on future attempts to establish compulsory Medicare programs both in Canada and in the United States.

It would indeed be unfortunate if public opinion should be based primarily on the fact that the doctors did "strike," rather than on an understanding of the issues basic to the dispute.

Stuart Weatherhead, M. D.
Minneapolis, Minnesota

Letter to the Editors:

To the Editor:

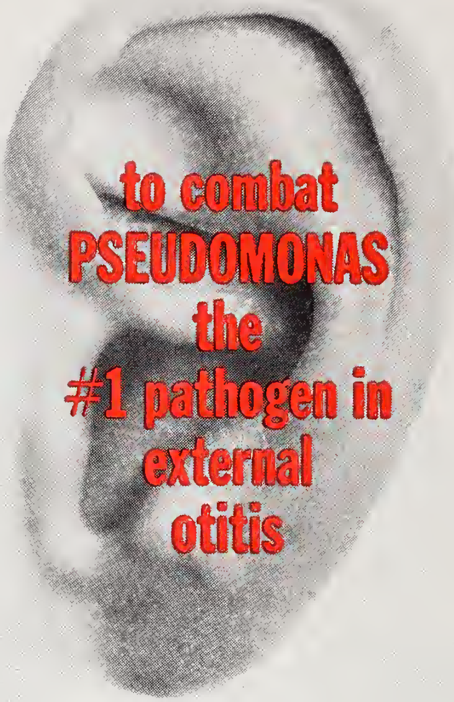
I was greatly interested in your brief squib in the April issue of MINNESOTA MEDICINE for 1962 on Security which appeared on page 377. It is remarkable how Abraham Lincoln's remarks of a century ago are so apropos today.

I would like to know what the occasion was for his making this remark. If you could just tell me where the reference is I would appreciate it very much. I hope you continue with these little squibs. I find them very interesting.

Nathan C. Plimpton, M. D.
Minneapolis, Minnesota

With reference to your letter, I regret to state that the Lincoln quote was obtained from a trade journal. Since then more accurate origin of these axioms has been found in "Lincoln Lore," Number 1085, January 23, 1950, a bulletin published by Lincoln National Life Insurance Company, Fort Wayne, Indiana. From these it appears that Lincoln did express the ideas in these axioms though the exact words were not his. I apologize for the error.

Editor



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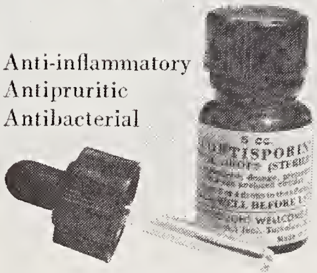

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Henry L. Ulrich, M.D.
Minneapolis

The name of Henry L. Ulrich has appeared on the masthead of MINNESOTA MEDICINE for the last 22 years. As he is resigning from the board of editors this year, it is fitting for MINNESOTA MEDICINE to pay tribute to one who has served the cause of medicine in Minnesota long and well.

Fortunately, Dr. Ulrich's resignation is not terminating his active service as a doctor or diminishing his prestige among his colleagues. Friday mornings he often attends grand rounds at the University Hospital, sitting at the left of center and occasionally offering a comment from his vast experience in medicine.

He was born in New Jersey in 1876 and spans in his lifetime the entire history of the University of Minnesota, with which he has been associated since 1902, his

Continued

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first year in Minneapolis. His Alma Mater is Rutgers University, a natural choice for a New Jersey boy, and he attended Johns Hopkins Medical School at a time when its great leaders, Osler, Welch, Halstad, and Kelly were most active. Undoubtedly his experience as a clinical clerk under Osler stimulated his later interest in the special field of internal medicine. His early interests, however, were pathology and laboratory medicine.

Shortly after his arrival he taught clinical microscopy in the University Outpatient Building at Seven Corners. Before the State Board of Health did Wassermann tests, he performed serological studies in his private laboratory for clinicians and for the State.

He was chief of medicine at the Minneapolis General Hospital from 1917 to 1927, his residents including such men as Leo Rigler, Archie Cardle, Moe Nathanson, and Julius Jensen. Early in his tenure at Minneapolis General Hospital he was influential in raising professional standards there; it was through his effort and despite the superintendent's opposition that the Hospital acquired an electrocardiograph. Throughout his professional life he has been quick to appreciate and utilize innovations.

In 1927 Dr. Ulrich was appointed Professor of Medicine at the University of Minnesota and in 1945 was retired as clinical Professor Emeritus. Throughout his long career at the University he emphasized the necessity of the careful physical examination. A host of medical students were initiated into the mysteries of physical diagnosis by him.

Dr. Ulrich is recognized by all to be the Dean in the Medical Arts Building, this honor carrying with it the privilege of being taken, alone and express, on the elevator to the 19th floor.

For several years around 1910, Dr. Ulrich maintained no private office, but saw his patients at the Eitel Hospital, where he served as laboratory and medical consultant. Since 1958 he has reverted to that earlier pattern — maintaining no downtown office but seeing patients only in hospitals. At one time or another he has been chief or a member of the staff of Northwestern, Abbott, Deaconess, Asbury, St. Mary's, Eitel, and Swedish Hospitals. It can be said that every hospital in Minneapolis has directly felt his influence for the improvement of standards and of patients' care.

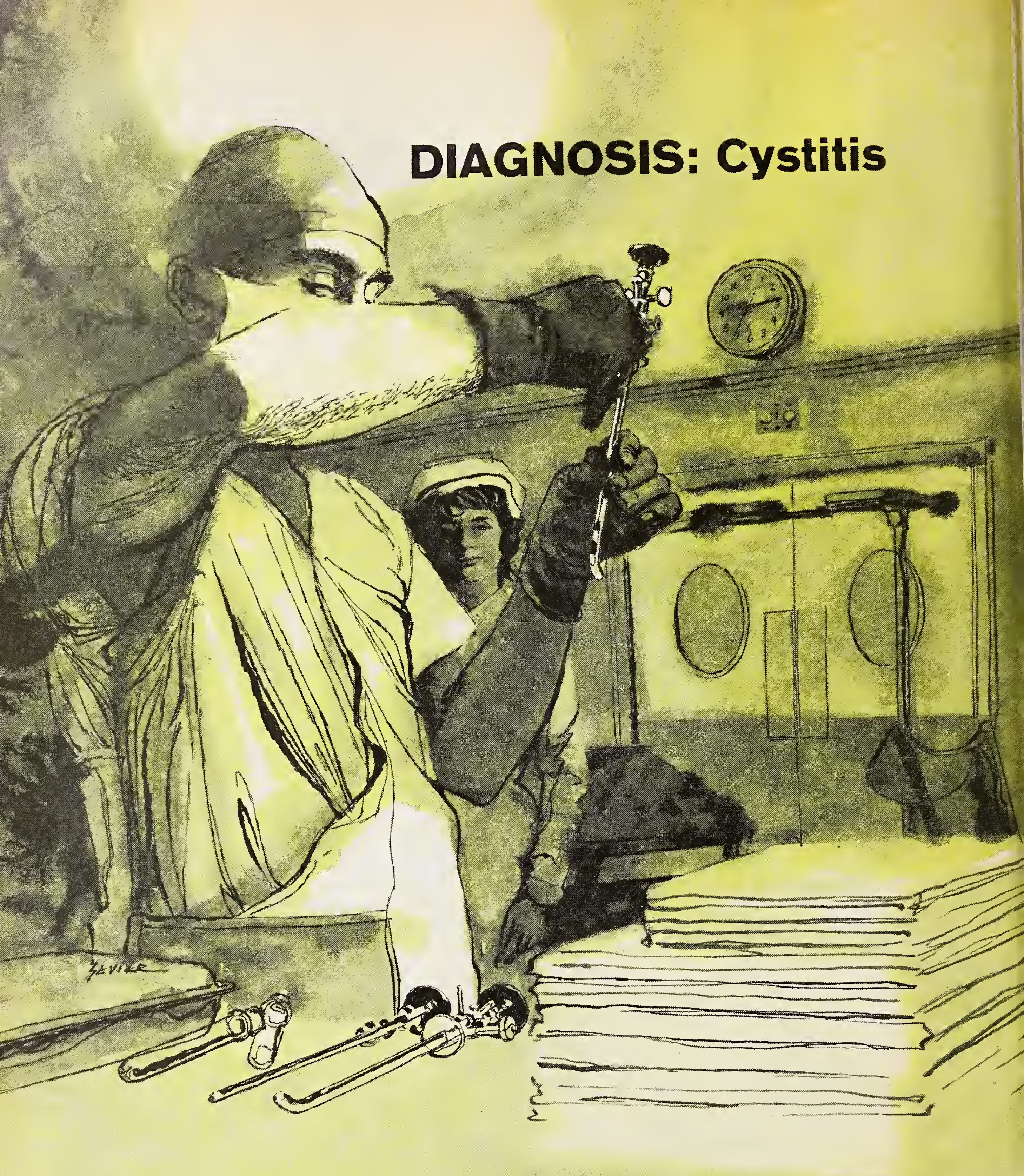
Dr. Ulrich has always been active in the affairs of the Hennepin County Medical Society, and his interests there culminated in the presidency during the year 1937. Numerous local organizations claimed his interest, but his favorites were the Minnesota Society of Internal Medicine, which he helped to organize and which he headed in 1932, the Minnesota Academy of Medicine, of which he was president in 1925, and, of course, MINNESOTA MEDICINE.

A coronary thrombosis in 1952 did not deter him from returning to consultation practice, which he has continued to the present.

A full and active medical career did not preclude a normal and satisfying family life with wife and children, a life now continuing at his old home at 1718 Oliver Avenue South.

We have touched here only briefly on a few of the high lights in Dr. Ulrich's career. A scholar's account of his life was published by his good friend, Thomas Peppard, in 1960 (Journal Lancet 80:86). Dr. Ulrich's own evaluation of medicine and indirectly of himself is given in his recent publication (A re-evaluation of the term "physical examination," MINNESOTA MEDICINE, December 1961) wherein he says, quoting Hippocrates, "In purity and holiness I will pass my life and practice my art."

Reuben Berman, M.D.
Minneapolis, Minn.



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Abstracts and Briefs

GALLSTONE OBSTRUCTION

Because of the fifty percent mortality associated with this condition, the authors feel that periodic review of the clinical manifestations and treatment is in order. Four cases are presented, bringing the total recorded in the literature to 675, which is obviously only a portion of the true total.

It is estimated that 0.3 to 0.5% of all cases of cholelithiasis result in this phenomenon, and that 3% of all cases of intestinal obstruction are caused by gallstones. Not all stones entering the intestinal tract cause obstruction, 80 to 90% of them passing uneventfully. These are generally stones of less than three centimeters in diameter. Most instances of obstruction occur in the ileum where the lumen is normally narrowest.

Symptoms and clinical findings are not diagnostic. Characteristic x-ray findings may be of diagnostic significance. They include air shadows in the biliary tree, dilated loops of small bowel, demonstration of an opaque stone, particularly one with a changing location.

Treatment consists of surgical relief of the obstruction after appropriate pre-operative preparation. Local removal of the obstructing stone is usually adequate, but where bowel viability is impaired resection must be performed. The patient is usually too ill to permit removal of the gall bladder or correction of the fistula. Search should be made, however, for residual stones capable of causing recurrent obstructions.

Reconsideration of gallstone obstruction is a timely topic, because the relative infrequency in the average surgical practice together with its non-specific clinical manifestations will often result in dangerous procrastination. Prompt recognition, adequate preparation, and good surgical technic will salvage many such patients and significantly reduce the past high mortality rates. The "tips" suggested in this article will be very helpful in the management of such cases.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Intestinal Obstruction Due to Gallstones" Raiford, T. S. Annals of Surgery 153:830, June, 1961.

CIRRHOSIS OF THE LIVER AND BLEEDING ESOPHAGEAL VARICES, A COMPARISON OF OPERATIVE AND NON-OPERATIVE TREATMENT

The authors report an experience with forty-two patients representing less than fifty percent of patients with cirrhosis and major bleeding from esophageal varices seen in a twelve year period in St. Luke's Hospital in New York, forty-two of these patients being suitable for operative risk after evaluation. One-half of these deemed suitable were subject to porta caval shunt and one-half were treated conservatively. In the non-operative group, thirteen of the twenty-one died within one year of the first major hemorrhage. Two more died in the second year. Of the operated group 76% survived more than one year, four dying in the second year, leaving a two year survival of 57% as compared to the 28.5 percent of the comparable cases treated medically for a two-year period after their first major hemorrhage from esophageal bleeding.

The authors also noted that the presence of ascites strikingly influenced the mortality rate so that in the presence of ascites 65.7 died with the first major hemorrhage while only 27% died of the similar episode without ascites.

Further statement indicates that four patients who had prophylactic shunts without any history of bleeding have all remained well, one for four years and two for two years, the remaining one a one year follow-up.

Various views have been presented in the comparison of non-operative versus operative treatment of the portal hypertension esophageal bleeding, this paper adding reasonable supportive evidence for the benefit of properly chosen procedures.

J. H. Stickler, M.D.
Minneapolis, Minnesota

Annals of Surgery, July, 1961. Robert Edmunds, M.D. and John P. West, M.D., New York, pp. 41-45.

URIC ACID IN NEOPLASTIC DISEASES

Previous publications have documented the association of hyperuricemia with blood dyscrasias, particularly the leukemias. Studies are cited correlating the occurrence of gout in patients with carcinomas.

Continued

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In the present study from the Francis Delafield Hospital in New York, analysis is made of the course of patients with solid tumors and hyperuricemia.

The analysis covers 79 cases in which the uric acid level exceeded 6.0 mg percent. Patients with lymphoma or leukemia, or those with any evidence of renal dysfunction are not included in the study. Most of the primary sites were from the breast (37%) or lung (33%).

Thirty-nine percent of patients with hyperuricemia also had hypercalcemia. Thirty-eight percent of patients with hyperuricemia had liver dysfunction and enlargement secondary to metastases. Nine patients significantly increased their uric acid level after chemotherapy. Five patients had clinical occurrence of gout, but three of them had also had attacks prior to onset of the cancer. Gout developed in the remaining two subsequent to the appearance of the cancer.

From this study the author concludes that 1) hyperuricemia seemed to occur more often in patients with disseminated disease than in those with local disease, 2) anaplastic tumors seemed to be associated with elevated uric acid more often than well differentiated tumors, 3) liver involvement and hypercalcemia were frequently associated with hyperuricemia.

There is some speculation that hypercalcemia may impair renal excretion of uric acid excretion. Suggestion is made that the uric acid level be observed in patients undergoing chemotherapy, particularly in lymphomas or leukemias. If more effective chemical agents can be developed for treatment of solid tumors, a hyperuricemia may prove to be a greater hazard here too.

Observations such as those described in Dr. Ultmann's study will cumulatively aid our understanding of the metabolism of malignant tissues. Even though current clinical knowledge of such processes by the average practitioner is of necessity meager, there have become apparent some aberrations which we can appreciate and demonstrate in clinical practice. Patients with neoplastic tissues, particularly those with widespread lesions undergoing destructive changes in association with newer types of therapies, should be observed for hypercalcemia and hyperuricemia, since both conditions may be unpleasantly symptomatic. Practically speaking, inasmuch as life is being extended in many of the patients we encounter with common breast and lung cancers and leukemias, even in the absence of cure, it behooves us to promote the well-being of such patients by awareness of and ability to improve symptomatic abnormalities of calcium and uric acid.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Hyperuricemia in Disseminated Neoplastic Disease Other Than Lymphomas and Leukemias." Ultmann, J. E., Cancer, 15:122, Jan.-Feb. 1962.

LONG-LIMBED T-TUBE

In recent years considerable speculation has developed regarding the possible hazard of pancreatitis resulting from occlusion of duct orifices through use of the long-limbed T-tube. Dr. Cattell presents a defense of this technic in the current article which summarizes his experience since introduction of this device in 1946.

Circumstances in which the long-limbed T-tube may be considetred helpful are: 1) After dilation or sphincterotomy for stenosis of the sphincter of Oddi, 2) Malignant occlusion of biliary ducts, 3) Duct protection during difficult ulcer dissections, 4) Stricture repairs.

Pancreatitis developed in five (or 0.9%) of 535 patients in which the long-limbed T-tube was employed. This is compared with an incidence of pancreatitis in four patients of a series of 637 in which no tube, or an ordinary short-limbed T-tube was used. Cumulative review of the reported series of several authors prominent in biliary surgery discloses a general incidence of post operative pancreatitis of 0.9%.

Consequently it is concluded that post-operative pancreatitis may or may not develop independent of the use of the long-limbed T-tube, and that it more probably is related to the extent of manipulation or interference with pancreatic blood supply.

Judging by the data recorded in Dr. Cattell's experience an evidently useful technic has, in some instances, been unjustifiably condemned. Perhaps this controversy illustrates the old observation that a good tool must be properly employed to obtain successful results. More instructive, however, is the warning regarding the necessity for gentle technics in any manipulation involving the biliary-pancreatic systems.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"An Evaluation of the Long T-tube" Cattell, R. B. and Braasch, J. W. Annals of Surgery, 154:252, August, 1961

RECURRENCE AND METASTASES IN HEAD AND NECK CANCER

The Surgical Branch of the National Cancer Institute has compiled a study of 89 patients with cancer of the head and neck treated between July, 1953 and January, 1960. Their main objectives were to stress the incidence of distant metastases and local recurrences. Except for two cases of adenocarcinoma of the paranasal sinuses, all patients had epidermoid lesions. Excluded from the study were patients with primary lesions of the lip, skin, salivary glands, nasopharynx, thyroid, and neck with an unknown primary. No patient had radiological evidence of pulmonary or skeletal metastases on admission.

The actuarial life-table technic of analysis discloses a cumulative distant (below clavicle) metastasis rate of 23% at two years, a local recurrence rate of 47% at three years, and a five year survival rate of 35%.

Apparently the occurrence of distant metastases or local recurrence had no statistically significant relationship to the presence or absence of cervical node involvement.

Apparently the ability of these lesions to locally recur and distantly metastasize is of greater consequence than has previously been appreciated. Since the interplay of factors in the neoplasm-host relationship resulting in these misfortunes remain for the most part unknown, one must emphasize prompt recognition and effective treatment in the earliest stages of the lesion.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"Distant Metastases and Local Recurrence in Head and Neck Cancer" Arons, M. S., and Smith, R. R. Annals of Surgery 154:235, August, 1961

End

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By Nathan S. Kline, M.D., F.A.C.P., Rockland State Hospital, Orangeburg, N.Y.; Department of Psychiatry, Columbia University College of Physicians and Surgeons; and Heinz Lehmann, M.D., Verdun Protestant Hospital, Montreal; Department of Psychiatry, McGill University Faculty of Medicine. About 114 pages, 6"x9¼". About $3.50. *New—Just Ready!*

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Book Reviews

THE SPINE — A Radiological Text and Atlas — By Bernard S. Epstein, M. D., Philadelphia, Lea & Fibiger, Second Edition, 1962. 616 Pages, 893 Illustrations.

$6.50

This is a second edition of a very useful book, first published in 1955. As its title implies, this is primarily a radiological text. However, it is much more comprehensive in its subject coverage than merely an elaboration of x-ray findings. The author very graphically and succinctly covers the etiological, pathological, clinical and radiological aspects of the spine. The spine is covered first from an embryological standpoint and then the abnormalities of the spine are taken up under specific headings. One significant omission is that the text fails to a large degree in identifying the illustrations demonstrating the subject being considered. This is especially evident in the chapter on development where one graphic illustration could replace a page of redundant description.

A very good and fairly current reference list is found at the end of each subject. This enables one to check the literature with ease for a more comprehensive review of the subject desired.

The chapters on "Spinal Traumatic Changes and Diseases of the Intervertebral Discs" are especially well done with excellent radiographs and a general survey of the current medical opinions in these respective fields.

Everything considered, this book is an excellent addition to the library of all physicians, but especially that of the radiologist, the orthopedic surgeon, and the neurosurgeon.

Richard C. Tucker, M. D.
Minneapolis, Minnesota

SKIN SURGERY — Ervin Epstein, M.D., Lea and Febiger, Philadelphia, Publisher, 336 pages, $10.00.

This monograph is written by Dr. Epstein, professor of dermatology, University of California Medical School.

There are 13 contributing authors. All chapters are well illustrated, some with photographs, others with drawings.

Part I deals with cold steel surgery and covers very well the plastic procedures that are undertaken for cosmetic results as well as for curative results for associated diseases.

Part II deals with electrosurgery, electro-coagulation, cautery excision, electro-dissection and curettage, and epilation.

The methods of chemo-surgical procedures in the control of cutaneous cancer are described under special technique. Dermabrasion is a relatively new procedure designed to remove superficial cosmetic blemishes such as those caused by smallpox scars or acne scars.

Because of the more or less uniform concern over baldness, a chapter dealing with the physical treatment of baldness presents an interesting aspect. One might question the psychic makeup of an individual who would resort to such strenuous attempts to restoring hair.

Though most of the surgery described in this monograph would be classified as minor surgery, there may be a considerable number of problems which arise for anyone who is interested in this type of plastic surgery. This book is well worth having at hand.

Carl O. Rice, M.D.
Minneapolis, Minn.

DRUGS OF CHOICE 1960-1963 Walter Modell and Collaborators, C. V. Mosby Company, St. Louis, 1962 941 pages $14.50.

This text of pharmacology organized by Walter Modell is now produced in its third edition and is well on its way to becoming a standard encyclopedia source of reference for the medical student and physician. The chapter headings indicate the practical and simplified approach to the subject. Some of the titles are: Drugs for Children; Hypnotics; Agents for Disturbances in Equilibrium.

The plan of each chapter includes a heading with a table listing the drugs under consideration by class, compound, and tradename. This is followed by a brief discussion of the action, use, dosage, and toxicity of the drug. Each chapter is written by an authority in the field of his concern. Of the 47 collaborators only four are identified as professional pharmacists. The others are in many other branches of medicine.

The result is a work of interest to all physicians.

By using tradenames along with the generic terms, Modell makes the necessary compromise in the direction of intelligibility to the practitioner whose prescriptions are usually prescribed by trademark names and not in chemical formula.

This reviewer is reminded of the confusion which arose after his decision to prescribe only in chemical terms when, in an effort to obtain Nembutal, he wrote the word Pentobarbital, which the pharmacist interpreted as Phenobarbital and the patient therefore received Luminal. After this experience this physician returned permanently to the practice of using the more commonly employed trademark names.

It is difficult to understand how the authors project their choice into 1963, implying a prophecy into the future. This is a mere cavil.

Reuben Berman, M. D.
Minneapolis, Minn.

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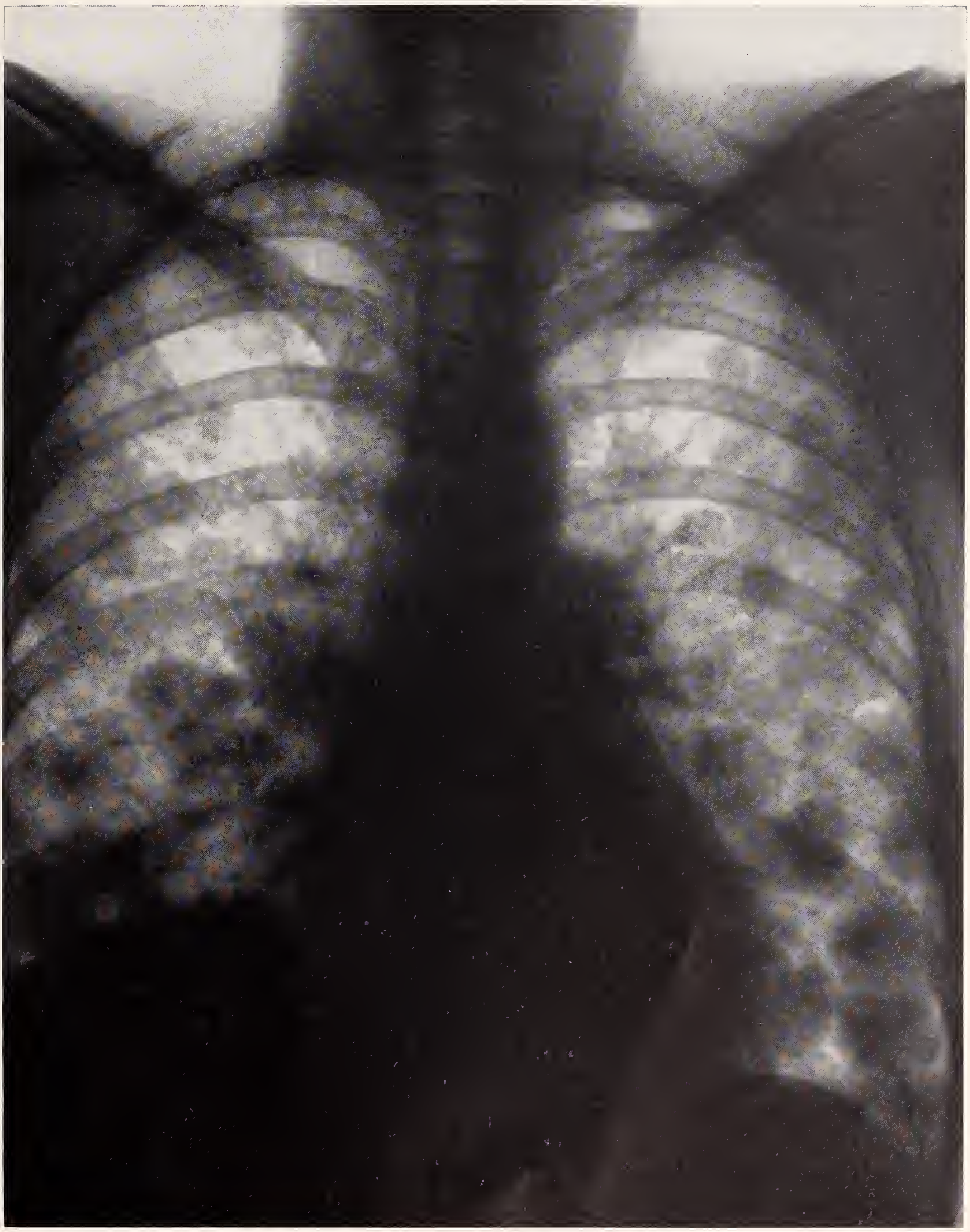

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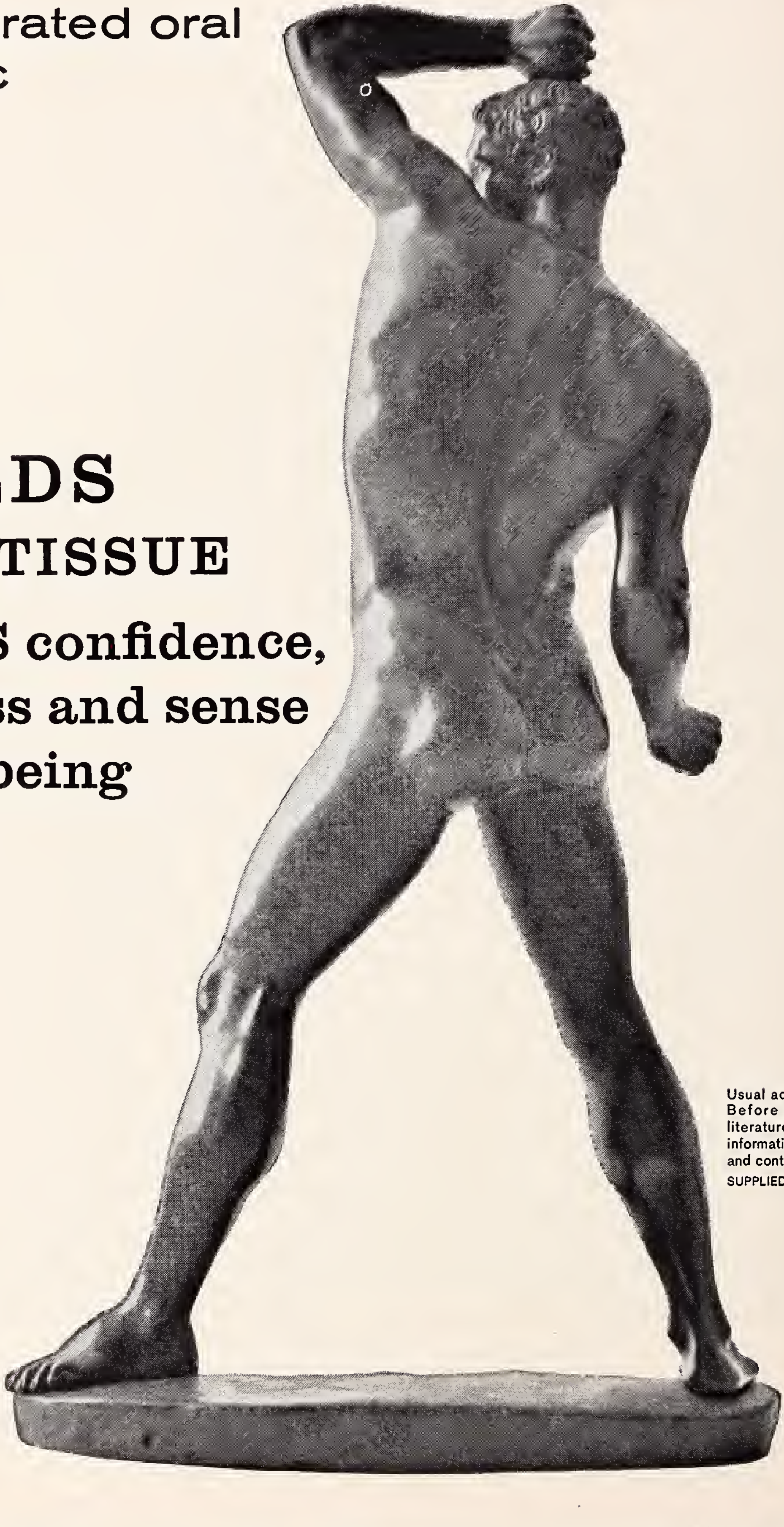

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Curbstone Consultation

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M. D. Duluth

ANSWER: From the information given, one may assume that the patient is no longer digitalized. Cedilanid is rapidly excreted—approximately one-half of the initial dose in twenty-four hours—if renal function is normal. When changing to a slower-acting preparation, such as digitoxin, the patient must be "re-digitalized" in a sense, giving 0.8 mgm. of digitoxin the first day, 0.4 mgm. the second day, etc., the subsequent doses being determined by the clinical status.

QUESTION: A patient has told me that she read in a lay magazine that thiamine, taken by mouth, was an effective tick repellent. Is there any basis to this?

M. D. St. Cloud

ANSWER: A considerable number of drugs, including thiamine HC1, appear to act as insect repellents when taken orally, in certain individuals. Presumably this is based on cutaneous excretion of the drug or its products. However, the individual variation is so great that no recommendation can be made to any one patient regarding the probable efficacy of a given drug.

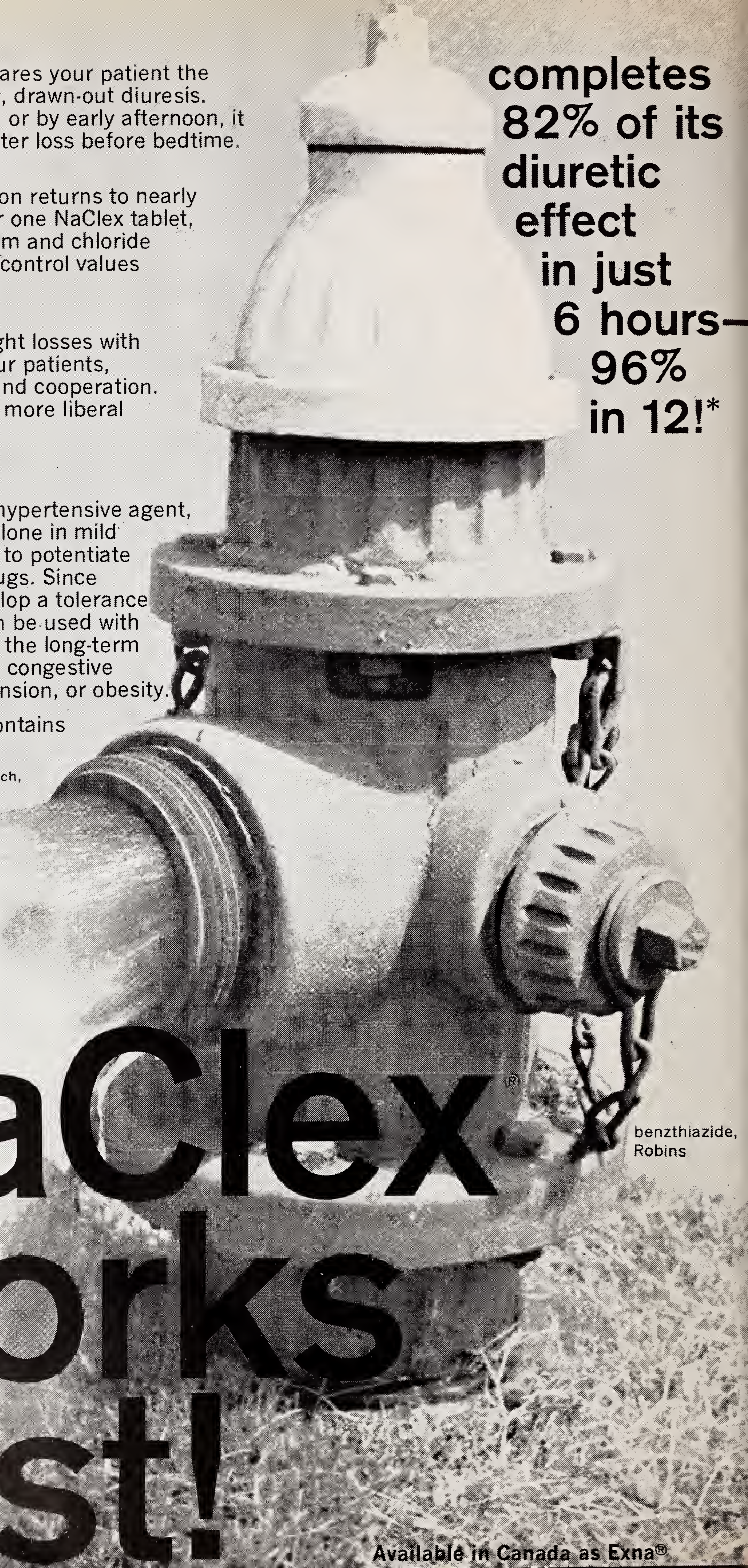
QUESTION: How effective is Aqua-Ivy in the prevention of poison ivy?

M. D. Bismarck

ANSWER: Drugs used to prevent poison ivy dermatitis are difficult to evaluate, since few subjects will willingly expose themselves deliberately. The few controlled studies available indicate an over-all effectiveness for Aqua-Ivy of about 15%. It can hardly be recommended with much enthusiasm, but there appear to be no other contra-indications to its use.

You are invited to send your questions to Curbstone Consultation Section of Minnesota Medicine, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota. Your name and address will be withheld. Answers will be given anonymously but the author's name will be provided if additional details are desired.

Unless they share your opinion, we seldom find people sensible. La Rochefoucauld



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*R. V. Ford: Cur. Ther. Research, 2:51, 1960.

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Special Article

ALEX BARNO, M.D.
D. W. FREEMAN, M.D.
M. P. BAKEN, JR., M.D.
Minneapolis 16, Minnesota

Two Decades of Progress

Minnesota Maternal Mortality Study*

Minnesota has a remarkable record in reduction of maternal mortality during the past two decades. The authors present a detailed analysis of this prolonged effort in our state, and the data and conclusions will be of great interest to all physicians who handle maternity cases. A timely summary report.

The Minnesota Maternal Mortality Study was first done on a one-year basis in 1941 and has been a continuous study since 1950. This has been conducted by the Maternal Mortality Committee of the Committee on Maternal Health of the Minnesota State Medical Association. The mechanics of the study need not be repeated since this has been published,[1] but it should be re-emphasized that all data pertaining to each death are obtained by an obstetrician-consultant who reviews the hospital and prenatal records, and interviews the various personnel involved. A detailed anonymous case summary is then presented to the Committee. The Committee determines the cause of death, criticizes the management, and makes a judgement as to preventability and responsibility for the death. Previous yearly reports were published[1] but were discontinued because of their repetitiousness. Various aspects of the study have also been reported.[2-10]

Data are now available for analysis of the 10 years of the current study, 1950 through 1959, and comparisons can be made with the 1941 study. It is the purpose of this paper to evaluate the progress attained and to discuss some aspects of the study with particular emphasis on deaths due to hemorrhage.

As seen in Figure 1, Minnesota has been consistently below the national mortality rates. Forty-five years ago the rate in Minnesota was 50 deaths per 10,000 live births, or five per 1,000. This rate remained rather constant for the next 20 years. Marked improvement began in 1937 and has continued to the extent that, during the last several years, the rate is one to two per 10,000 live births or 0.1 to 0.2 per 1,000. This would seem to be an almost irreducible minimum. Many factors are responsible for this progress and these will be mentioned later.

Table 1 analyzes the rates in more detail. During the past two decades the birth rate in Minnesota has increased by 59 per cent; yet the total maternal deaths (from all causes) have decreased by two-thirds. In 1957 there were 60 total maternal deaths but 11 of these were due to an epidemic of Asian Influenza. The gross maternal mortality has decreased by three-fourths. Considering the obstetric deaths (those where pregnancy played a causative role), these also have decreased by three-fourths. The corrected maternal mortality rate (considering only the obstetric causes of death) has decreased by 85 per cent. More important, the deaths considered preventable by the Committee have decreased by 90 per cent. All will agree that this is tremendous progress, for which Minnesota physicians can be justly proud. Many factors are responsible

Continued

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* **From the Minnesota Maternal Mortality Committee**

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for this, such as improvement in prenatal care, improved training of physicians, availability of blood and antibiotics, better anesthesia, better organization of hospitals for obstetrical care, better nursing care, etc.; but as McKelvey[11] states in an editorial in Minnesota Medicine, the general practitioners deserve most of the credit for this progress, since they care for the majority of pregnant patients. Some credit is also due the Minnesota Maternal Mortality Study through its educational program of published reports and discussions at County Medical Society meetings, hospital staff meetings, seminars, etc.

Obstetric Cause of Death

During the 10 years of the current study analyzed, there were a total of 493 maternal deaths, 59 per cent of which were obstetrical and 41 per cent non-obstetrical (Table 2). Ninety-five per cent of the preventable deaths were in the obstetrical category. Table 3 shows the obstetric causes of death. Here listed are the primary causes of death as determined by the Committee. In many instances there were several conditions which contributed to the patient's death. The triad of hemorrhage, toxemia and infection are the leading causes of death. Hemorrhage accounted for the greatest number (28 per cent), and two-thirds of these were considered preventable by the Committee. Of the total preventable, obstetrical deaths (112,), 46 per cent were due to hemorrhage. These deaths will be discussed later in more detail.

Toxemia

Over one-third of the toxemia deaths were considered preventable. A subsequent publication will analyze these deaths in detail, but the most striking deficiency was failure to act; that is, in the presence of fulminating pre-eclampsia, the failure to stabilize the patient with medical treatment and then accomplish delivery (preventing the progression to the stage of eclampsia.)

Infection

Infection was the third leading cause of death. Pulmonary embolism accounted for one-half of these deaths and was included in this category for the sake of uniformity, since it was covered in the 1941 study. Self-induced or criminal; septic abortions accounted for one-fourth of these deaths. Almost one-fifth of the infection deaths were due to puerperal sepsis in spite of antibiotic therapy. Antibiotics were not the panacea for troubles stemming from the disregard of basic obstetric principles of management. As an example, a patient was subjected to classical cesarean section after 60 hours of labor and expired from puerperal sepsis in spite of antibiotics.

TABLE I. MINN. MATERNAL MORTALITY RATES AND PREVENTABILITY, 1941, 1950 - 1959

Year	Live Births	Total Mat. Deaths	Gross Mort. per 1,000 Live Births	Obstetric Deaths	Corrected Mort. Rate	Preventability No.	% of Tota Maternal Deaths
1941	55,293	112	2.03	93	1.68	82	73
1950	76,074	68	0.89	47	0.62	22	32
1951	80,099	57	0.71	39	0.45	24	42
1952	78,990	58	0.73	31	0.39	10	17
1953	79,362	59	0.74	33	0.42	15	25
1954	81,033	40	0.49	27	0.33	12	30
1955	81,665	43	0.53	31	0.38	8	16
1956	82,620	45	0.54	26	0.31	10	22
1957	86,019	60	0.70	21	0.24	7	12
1958	85,594	26	0.33	14	0.16	3	12
1959	87,724	37	0.42	21	0.24	7	19

Heart Disease

Heart disease was the fourth leading cause of death. Rheumatic heart disease comprised the largest segment of this group (54 per cent), followed by congenital heart disease (27 per cent). Details of the cardiac deaths will be forthcoming in a subsequent publication.

Amniotic Fluid Embolism

Amniotic fluid embolism was the fifth leading cause of death. These deaths have been discussed previously.[5] As mentioned in a previous report,[8] in seven of these 20 deaths (one-third), there

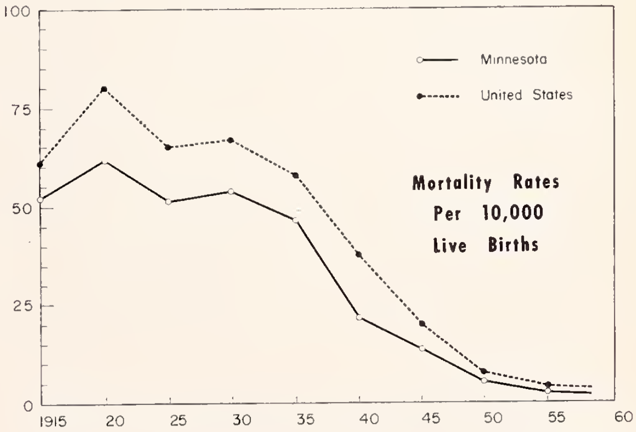

Fig. 1. Maternal Mortality rates per 10,000 live births for Minnesota and the United States since 1915.

Continued

additional clinical evidence[1]
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1. Borota, A., and Grinell, R.N.: J. Amer. Geriatrics Soc., 10:413, 1962.
2. Spoor, H. J.: N.Y. State J.M. 58:3292, 1958.
3. Lubowe, I. I.: Western Med. 1:45, 1960.
4. Weissberg, G.: Clin. Med. 7:1161, 1960.

TABLE 2. CAUSES OF DEATH AND PREVENTABILITY, 1950 - 1959

Cause	No.	%	Prev.	% of Total Prev. Deaths
Obstetrical	290	59	112	95
Nonobstetrical	203	41	6	5
TOTALS	493	100	118	100

appeared to be a direct association between pituitary extract administration, the production of tumultuous labor and the appearance of symptoms and signs of this fatal complication.

Anesthesia

The twelve deaths from anesthesia warrant some comment. It is gratifying to report that there have been no preventable anesthetic deaths since 1954, most of these occurring during the earlier years of the study. Of the seven preventable deaths in this category, four were due to incompetently-applied spinal anesthetics (over dosage of procaine — 120 mg. and 150 mg. and pontocaine — 18 mg. and 20 mg. respectively) with respiratory paralysis, shock and death resulting. Two of these deaths occurred in 1950 and two in 1951. There have been no spinal anesthetic deaths since 1951. It seems safe to state that the physicians in this state are now cognizant of the fact that the pregnant patient is intolerant to the ordinary doses of spinal anesthetic agents used in the nonpregnant individual. The other three preventable anesthetic deaths were the result of vomiting and aspiration during general anesthesia. These patients were fed during labor and then subjected to general anesthesia.

Air Embolism

Of the seven air embolism deaths, five were due to patients trying to abort themselves with the use of catheters. Two were due to air being pumped in under pressure inadvertently during blood transfusions at the time of surgery for ectopic pregnancy. Six of these seven had postmortem examinations. In the one patient, autopsy was refused, but this was one where air was pumped in at transfusion.

Other Causes

The "others" category is self-explanatory but warrants some comment. In the "not determinable" group, the evidence pointed to an obstetrical complication. Of the six transfusion deaths, two were due to incompatible blood as a result of errors in cross-matching, and four were due to overtransfusion in the presence of severe anemia, with resultant acute left ventricular failure. Because of the increase in plasma volume in pregnancy, after an anemia is studied properly and transfusion is indicated, washed red cells are preferable to whole blood. The disregarding of reasonable control of fluid and electrolyte balance problems resulted in five deaths. Two patients were given undiluted pituitrin intravenously with the typical red shock picture resulting (pituitrin shock).

Hemorrhage

Analysis of the obstetric hemmorhage deaths is recorded in Table 4. Forty per cent of these were due to ruptured uteri and/or lacerations of the cervix. Almost one-half of the ruptured uteri were due to procedures which are not indicated in modern day obstetrics (injudicious use of pituitary extract and *accouchement force*). Regarding the injudicious use of pituitary extract, in five patients it was administered by the subcutaneous route and in three by the intravenous route. At two of these three, the physician was not present for supervision of the pitocin administration. In all three instances, the concentration was too great and the administration too rapid. It is encouraging to report that there have been no ruptured uteri due to pituitary extract during the last two years of this study. Deaths associated with pituitary substances have already been reported in detail.[8] It is gratifying to report that

TABLE 3. OBSTETRIC CAUSES OF DEATH AND PREVENTABILITY, 1950 - 1959

Cause of Death	No.	%	Prev.	% of Total Prev. Deaths
Hemorrhage	80	28	52	46
Toxemia	52	18	21	19
Infection	45	16	11	10
Heart Disease	26	9	6	5
Amniotic Fluid Embolism	20	7	0	0
Chorionepithelioma	13	5	0	0
Anesthesia	12	4	7	6
Air Embolism	7	2	2	2
Others	35	12	13	12
Not determinable (9)	----	----	----	----
Transfusion deaths (6)	----	----	----	----
Dehydration and electrolyte imbalance (5)	----	----	----	----
Diabetes mellitus (5)	----	----	----	----
Idiopathic pulmonary edema (4)	----	----	----	----
Suicide (post-partum psychosis) (3)	----	----	----	----
Pituitrin shock (2)	----	----	----	----
Unexplained shock (1)	----	----	----	----
TOTALS	290	101	112	100

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there have been no *accouchement force* deaths since 1953. Of the seven, six occurred in 1951 and one in 1953. There were five spontaneous ruptures of the uterus in patients with no uterine scars, and five deaths as the result of ruptured scars of previous classical cesarean section, three of which were considered preventable by the Committee. It is interesting to note that there have been no deaths in the 10-year study from rupture of low segment scars. Unindicated version and extraction accounted for four deaths. These occurred in 1951, 1953, 1954 and 1956. Fetal dystocia accounted for two ruptured uteri deaths, the infants weighing 13 lbs. 5 oz. and 12 lbs. respectively.

Uterine Atony

Hemorrhage from postpartum uterine atony constituted the second largest group of hemorrhage deaths. Of these 15, only one received intravenous picocin drip, an advancement in our armamentarium that has been discussed and written about frequently during the past 10 years.

Tubular Pregnancy

Ruptured tubular pregnancy accounted for seven deaths. In three of these there was failure to make an obvious diagnosis, death resulting in the hospital without the benefit of surgery. In one there was delay in diagnosis, no intravenous was started at surgery, no blood was given, and the patient expired from hemorrhagic shock at surgery. One expired on the way to the hospital and two expired at home unattended.

The Placenta

Regarding the five premature separation of the placenta deaths, four expired as a result of acute renal insufficiency syndrome.

There were five deaths as a result of retained placenta. Two of these were patients who were illegitimately pregnant and delivered at home unattended. Another patient delivered precipitously at home (one hour of labor) and exsanguinated before the husband got her to the hospital. One patient expired at home (Indian Reservation) under the management of a midwife. The last patient in this group expired in a hospital. She was put back to bed after delivery in spite of retained placenta and expired from hemorrhagic shock. No attempt was made to treat the shock, and no attempt was made to perform manual removal of the placenta.

TABLE 4. ANALYSIS OF HEMORRHAGE DEATHS, 1950 - 1959

Cause	No.	%
Ruptured uteri and lacerations of cervix	32	40
Injudicious use of pituitary extract (8)		
Accouchement force (7)		
Spontaneous rupture (5)		
Previous classical cesarean section (5)		
Unindicated version and extraction (4)		
Fetal dystocia (2)		
Trauma (auto accident) (1)		
Postpartum atony	15	19
Ectopic pregnancy	7	9
Premature separation of placenta	5	6
Retained placenta	5	6
Afibrinogenemia	5	6
At cesarean section	4	5
Inversion of uterus	2	3
Blood dyscrasia	2	3
Others	3	4
TOTAL	80	101

Three of the afibrinogenemia deaths followed normal spontaneous delivery of the infants and two were associated with premature separation of the placenta.

Cesarean Section

The four deaths occurring at cesarean section warrant some comment. Only one was considered preventable by the Committee. This patient was having her third cesarean section for contracted pelvis. Some bleeding was encountered and she expired from hemorrhagic shock before blood could be started, since there was no preoperative cross-matching of blood or any consideration given to the administration of universal donor blood. Two patients expired from uncontrollable hemorrhage at cesarean section for placenta previa and one at repeat cesarean section from uncontrollable bleeding as a result of massive varicosities.

The remainder of the categories in Table 4 are self-explanatory except the "others." One of these expired as a result of renal shutdown secondary to hemorrhage and shock at spontaneous abortion. Another expired as a result of late postpartum hemorrhage from a cervical stump (she had had a subtotal hysterectomy because of a Couvelaire uterus). The third patient expired from late postpartum hemorrhage as a result of subinvolution of the uterus.

The management of the placenta previa in Minnesota seems to be adequate. There were a total of five placenta previa deaths in the hemorrhage group — two from *accouchement force,* one from atony after classical cesarean section and two from uncontrollable hemorrhage at cesarean section. Three of the five deaths were considered preventable.

(To be continued)

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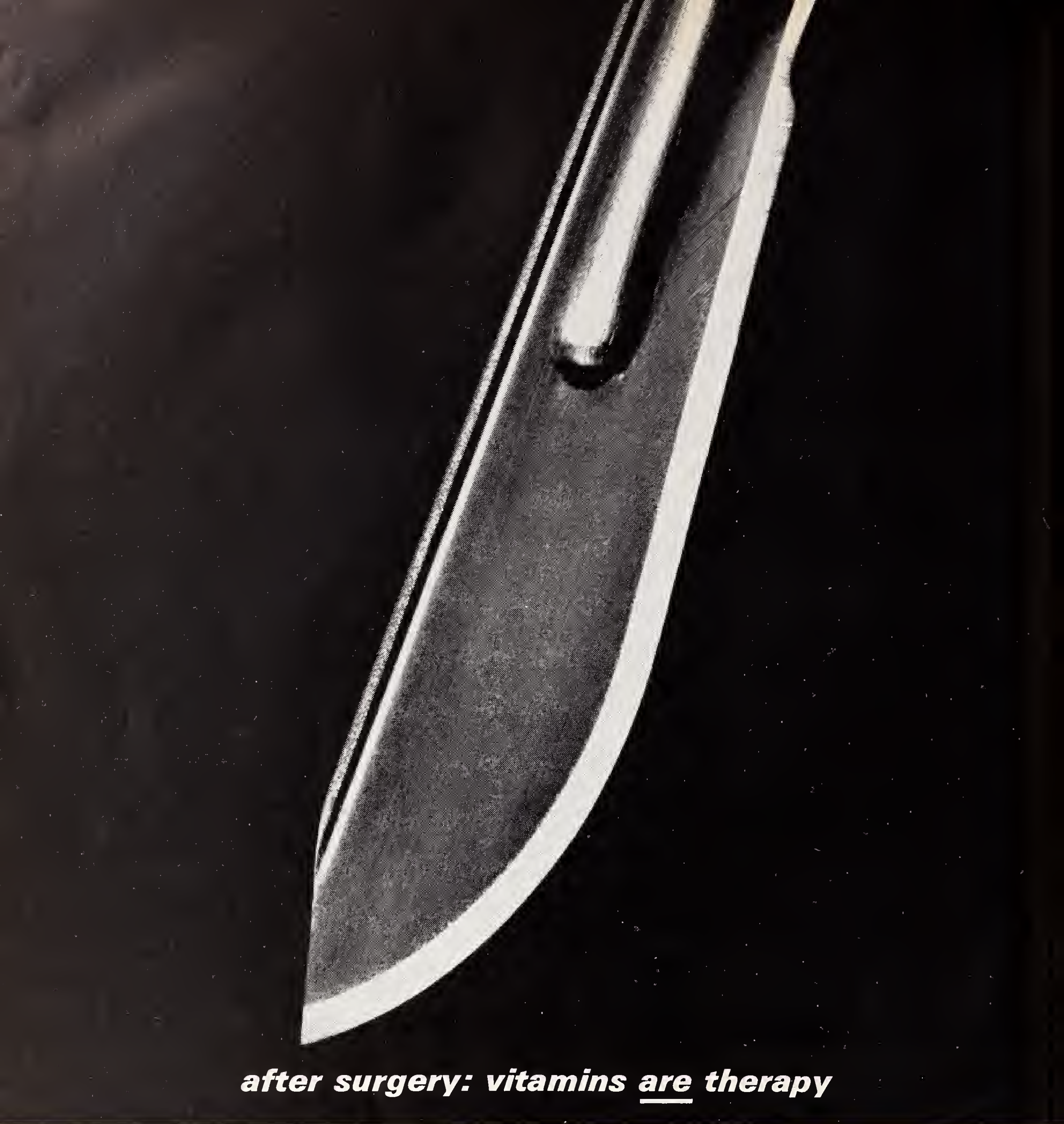

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Committee Review

MEDICAL LOANS AND SCHOLARSHIPS AVAILABLE TO MINNESOTANS

A variety of loans and scholarships are available to pre-medical and medical students at the University of Minnesota. Because there have been frequent inquiries about the financial aid opportunities available to young men and women considering a career in medicine, the Committee on Scholarships and Loans has prepared the following description of loans and scholarships.

These loans and particularly the scholarships are constantly changing in both amount and requirements. For that reason the committee recommends that the Bureau of Loans and Scholarships of the University of Minnesota or the Minnesota State Medical Association state office should be contacted in all cases for information and up-to-date verification of facts.

Additional copies of this resume are available from the State Association office.

Rural Medical Scholarship

This scholarship is awarded each year by the Minnesota State Medical Association to an outstanding freshman medical student.

The Rural Medical Scholarship provides $1,000 a year for each of the four years of medical school, and only Minnesota resident students who have lived in a rural Minnesota community are eligible.

Recipients of the award must sign an agreement to practice for at least five years in a rural Minnesota community in need of a physician, and upon completion of one year's internship must choose a community from a list of communities needing a physician and deemed capable of supporting one or more physicians.

If the recipient does not live up to this agreement, he must pay back the amount he has received, plus interest. This is because the scholarship is intended not only to financially assist a worthy and outstanding student, but also to insure a future supply of physicians for non-metropolitan areas of Minnesota.

Applications for this scholarship are accepted until November 1, of the student's freshmen year, with the winner of the scholarship determined by the Scholarship and Loans Committee of the Minnesota State Medical Association. Persons interested in applying for this scholarship should contact the Association, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota.

Minnesota State Medical Association Long-Term Loan

This loan is available to sophomores, juniors and seniors at the University of Minnesota medical school and interns in Minnesota hospitals who have established a need and been approved by the Scholarship and Loans Committee of the

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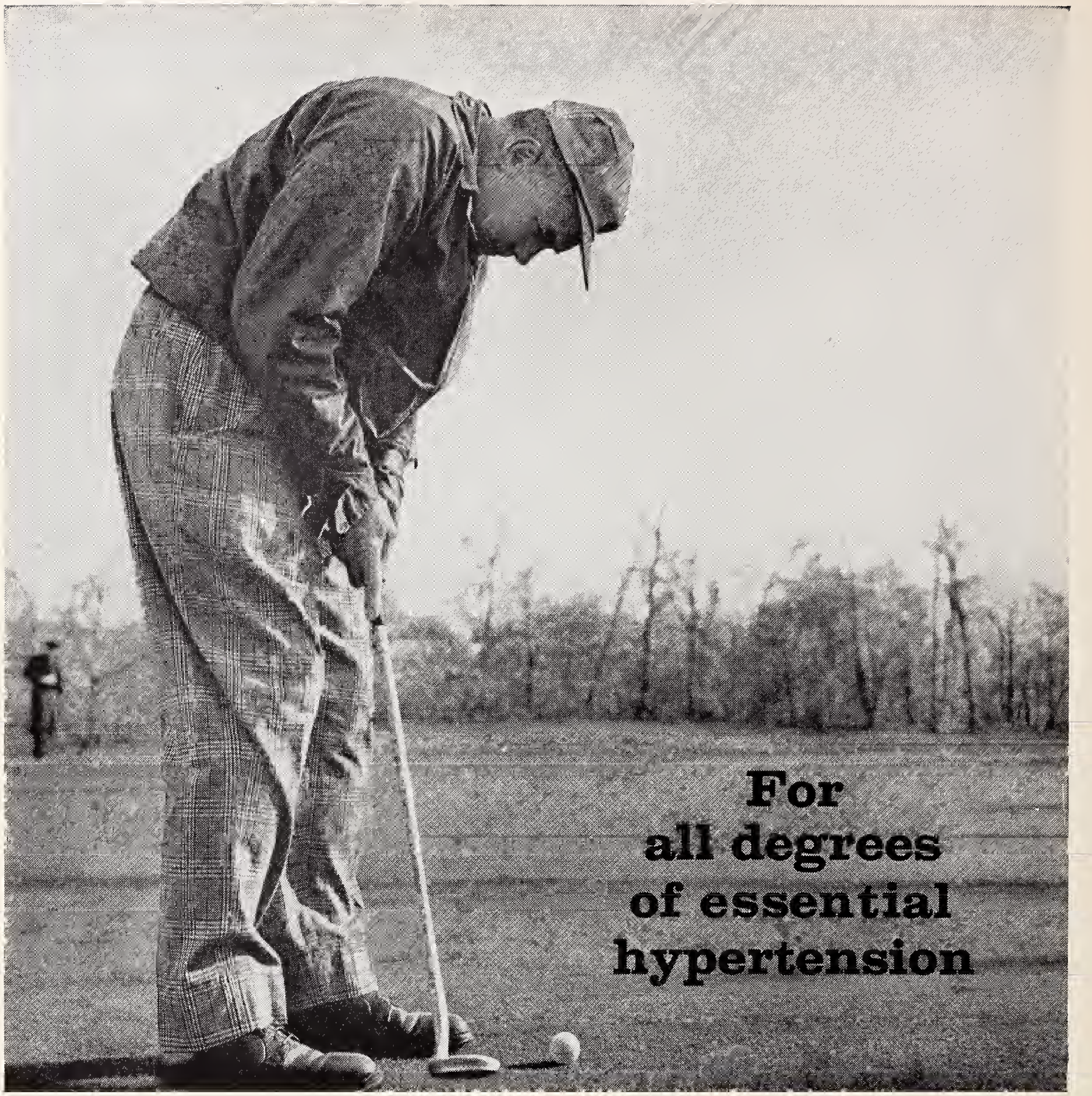

"relief of symptoms is striking with Rautrax-N"[†]

Rautrax-N decreases blood pressure for almost all patients with mild, moderate or severe essential hypertension. Rautrax-N also offers a new sense of relaxation and well-being in hypertension complicated by anxiety and tension. And in essential hypertension with edema and/or congestive heart failure, Rautrax-N achieves diuresis of sodium and chloride with minimal effects on potassium and other electrolytes.

Rautrax-N combines Raudixin (antihypertensive-tranquilizer) with Naturetin c̄ K (antihypertensive-diuretic) for greater antihypertensive effect and greater effectiveness in relief of hypertensive symptoms than produced by either component alone. Rautrax-N is also flexible (may be prescribed in place of Raudixin or Naturetin c̄ K) and economical (only 1 or 2 tablets for maintenance in most patients).

Supply: Rautrax-N — capsule-shaped tablets providing 50 mg. Raudixin, 4 mg. Naturetin and 400 mg. potassium chloride. *Rautrax-N Modified* — capsule-shaped tablets providing 50 mg. Raudixin, 2 mg. Naturetin and 400 mg. potassium chloride.

[†] Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

For full information, see your Squibb Product Reference or Product Brief.

Rautrax-N*

Squibb Standardized Rauwolfia Serpentina Whole Root (Raudixin) and Bendroflumethiazide (*Naturetin) with Potassium Chloride

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Minnesota State Medical Association. A maximum of $900 a year may be borrowed, with a total of $2,700 being loaned each year.

Administered by a bank, this loan is due in full 7 years after completion of internship. Interest begins the year after internship and is based on a sliding scale: 1 year - 2%; 2 years - 3%, 3 years - 4%, 4 years - 5%; 5 years or more 6%.

This loan is usually given to students who have utilized other loan funds to the maximum extent and need additional funds to continue their careers in medicine.

Interested students should contact the Minnesota State Medical Association, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota.

Herman M. Johnson Emergency Short-Term Loan Fund

This loan is administered by the Minnesota Medical Foundation using a $4,000 fund provided by the Minnesota State Medical Association.

The fund is a revolving one, and is available to any University of Minnesota medical school student. Up to $200 may be borrowed for a 90-day period without interest. If the loan is not repaid at the end of this time, interest will be charged. Through this fund, more than $9,000 was loaned to 70 borrowers during the first year of operation.

Students interested in this loan should contact the Minnesota Medical Foundation, 1324 Mayo Memorial Building, University of Minnesota, Minneapolis 14, Minnesota.

Minnesota Medical Foundation Scholarship Fund

The Minnesota Medical Foundation offers scholarships of $500 or more to qualified medical school students.

Applications are judged on the basis of scholastic achievement (55%) and economic need (45%). A scholarship is considered by the Foundation to be a reward for scholastic achievement, and is intended for "needy scholars."

One-half of all medical scholarships available at the University of Minnesota come from the Minnesota Medical Foundation, which is a non-profit corporation dedicated to the advancement of medical science through education and research at the University of Minnesota. 215 awards worth $110,000 were provided by the Foundation from 1949 to 1960. These funds were donated by medical organizations, corporations, foundations, and private citizens.

Students interested in applying for a Minnesota Medical Foundation Scholarship should apply to the Foundation, 1342 Mayo Memorial Building, University of Minnesota, Minneapolis 14, Minnesota.

AMA Loan Guarantee Program

This loan plan will assist medical students, interns and residents. Unlike other loan programs, first-year medical students are able to secure aid. In fact, it is hoped that this loan program will provide premedical college students with a sound basis for planning the financing of a substantial portion of the cost of their medical education.

Loans are available to full-time students in good academic standing who are U. S. citizens. Medical students must attend one of the American medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association. Interns and residents are eligible if they take their training in a hospital approved by the Council.

In general, the program is similar at all levels of medical education, both graduate and undergraduate. In order that the plan operates effectively, medical schools, the banking industry and the AMA each play a unique but significant role. Medical schools make the details of the plan known and provide application materials; private banking institutions make the loans; and the AMA guarantees the loan so that the interest cost to the student is minimized.

Loans are made through a combine of large banks, who pool financial resources out of which loans are made. All processing and records are provided by the Continental Illinois National Bank and Trust Company, so that the greatest possible saving is realized through volume and mechanization. As a direct result, the cost to borrowers in the present money market is reduced to 5½% simple interest during their training period.

The loan limit is $1500 in any one twelve month period, and $10,000 total for each borrower within a seven year period. A further limitation is that the total of all accumulated loans for education purposes may not exceed $15,000.

Under the program, a new note will be executed each time additional loan funds are grant-

Continued

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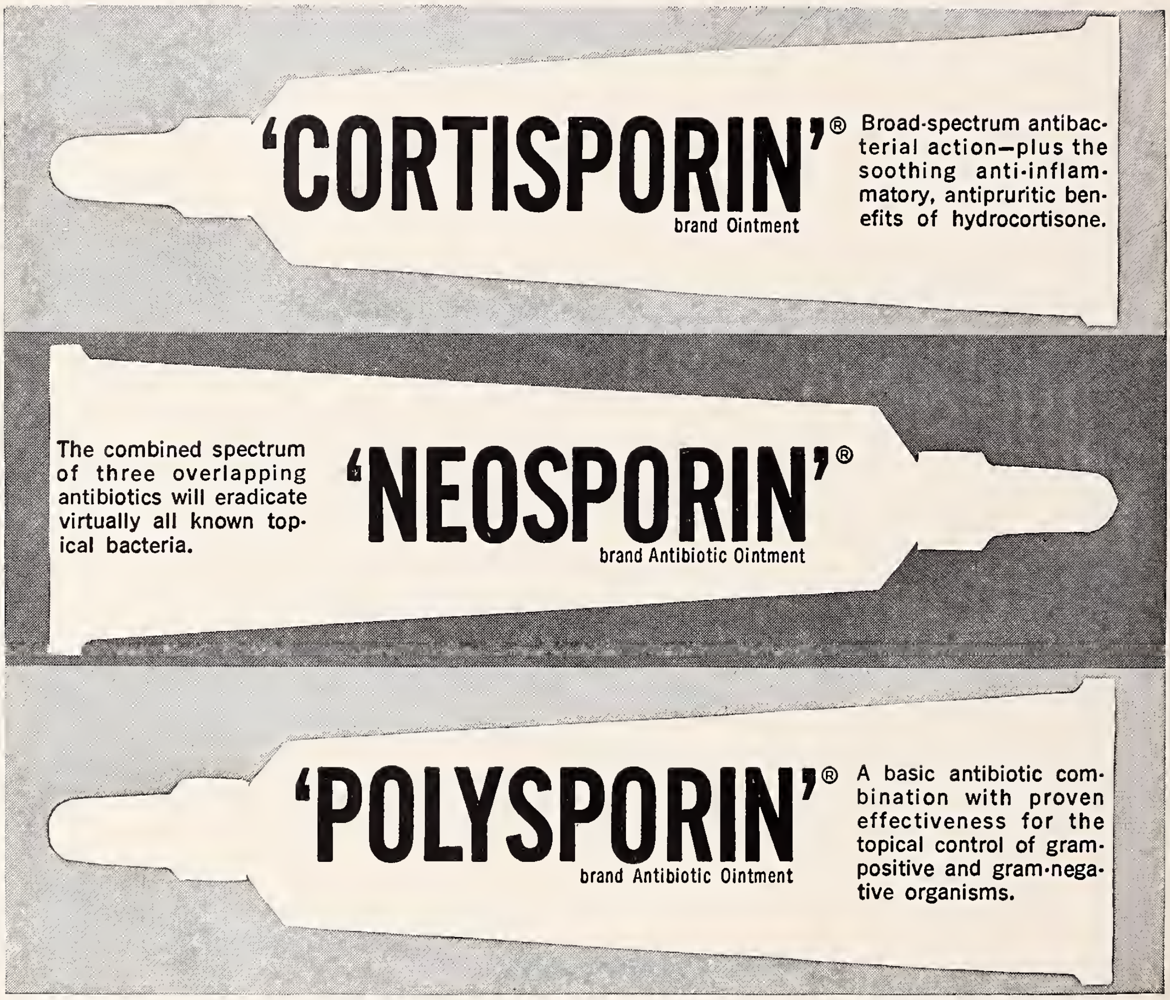

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A basic antibiotic combination with proven effectiveness for the topical control of gram-positive and gram-negative organisms.

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'Aerosporin'® brand Polymyxin B Sulfate	10,000 Units	5,000 Units	5,000 Units
Zinc Bacitracin	500 Units	400 Units	400 Units
Neomycin Sulfate	—	5 mg.	5 mg.
Hydrocortisone	—	—	10 mg.
Supplied:	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of ½ oz. and ⅛ oz. (with ophthalmic tip)

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ed to a borrower. This note, known as an "interim note" will include the principle and interest from the previous note and the principle and interest for the new loan to be granted. Five months after the borrower completes his training he has the privilege of converting the interim note into a payout note with a specified monthly payment schedule. The payout note will bear interest, in the current market, not to exceed 3½% add-on rate. If the accumulated amount to be repaid is less than $7200, the borrower may choose a level monthly payment of $30 or more. In the case that a greater amount is to be repaid, he may choose a repayment schedule which will provide a ten year period with small payments (5% of the total annually) for each of the first three years, moderate payments (10% of the total annually) for each of the next five years, 15% of the total amount during the ninth year and the remaining 20% during the tenth year. This plan permits the debt to be retired during the physician's first ten years in practice. The borrower has the further privilege of prepaying the loan thus reducing the interest costs.

Another option of the borrower is that he may choose to transfer his loan from the Continental bank to a local bank in the community where he establishes his practice.

Advantages of the plan: It creates the opportunity to borrow up to approximately one-half of the cost of a medical education for any student in good standing. The total number of students who can be assisted is limited only by the size of the security fund. Thus this plan can make a major attack on the problem of financing a medical education.

It assists financing of medical education without subsidy of any kind.

It provides loans at a low cost.

The length of time over which the student in medical education can borrow is designated to fit the period of time required to complete his educational plans. Furthermore, the repayment may be spread over a ten-year period so that the installments are of a reasonable size even for a maximum size loan.

Persons wishing additional information about this loan program, and/or application blanks, should contact the Office of the Dean, School of Medicine, University of Minnesota, Minneapolis 14, or write to AMA-ERF, 535 North Dearborn Street, Chicago 10, Illinois.

U. of M. Student Loan

This loan is available to any student registered at the University of Minnesota who has completed a minimum of two quarters of academic work or its equivalent, and who is making satisfactory progress toward an educational objective.

Students in the professional schools of Medicine, Denistry, Veterinary Medicine, and Law students in the Graduate School may borrow up to $750 in any school' year, and a total maximum of $1,500.

These loans bear simple interest at the rate of 5% per annum. The University waives 2% interest during the period in which the student is enrolled in the University; the full 5% being charged upon leaving the University. Interest is paid annually in the case of long-term loans, even during the period when no payment of principal is due.

Repayment of principal and accrued interest is required at the time of the agreed upon maturity of each loan. If payment is made prior to maturity, a corresponding reduction is made in accrued interest. In the case of long-term loans, the loan becomes due and payable immediately on withdrawal from the University prior to obtaining a degree.

Funds are limited and are intended to be supplemental in nature. Applicants should be using all other available resources and making every effort to live within their means. In general, loans are available for expenses which must be met in order to insure continued academic progress at the University.

Interested students should apply to the Office of the Dean of Students, Bureau of Loans and Scholarships, 201 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota.

National Defense Loan Program

Undergraduate or graduate students who are U. S. Nationals (citizens or persons in the U. S. on a permanent resident status) are eligible for this loan program.

Applicants must have been accepted for enrollment at the University of Minnesota as a full-time student, or, if already attending the University, must be a full-time student (registered for a minimum of 12 quarter credit hours) who is making normal and satisfactory progress toward a degree. A part-time student, or one who

Continued

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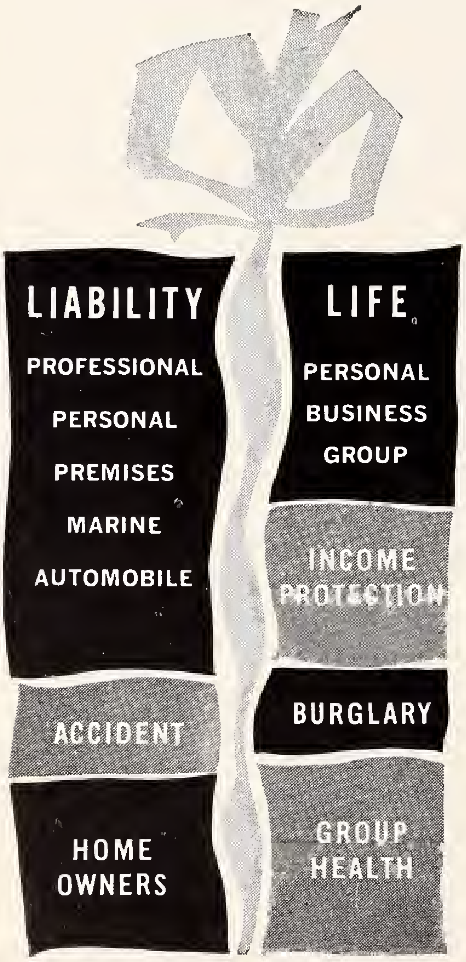
Blue Shield works with the medical profession to program benefits which are realistic and in step with the dynamics of modern medical practice.

As an instrument of the voluntary practice of medicine in the United States, Blue Shield has an honorable heritage.

Blue Shield has only one function: To preserve this heritage and to help doctors protect their patients.

Minnesota Medical Service, Inc.
St. Paul 14, Minnesota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attends only summer sessions, is not eligible. A graduate student may be considered as registered for a full-time course of study, although he is not carrying 12 quarter credit hours, by submitting a statement from his faculty adviser certifying that his academic loan (e.g. preparing for preliminary exams, writing a thesis) is equivalent to a full-time class schedule.

Need is the primary condition of eligibility for The National Defense Student Loan Program, although there must also be a cumulative college record of at least "C," and an average of at least "C" for the quarter preceding application for the loan.

This loan is intended to be used only for University-related expenses such as tuition, required fees, books and supplies, room and board, and ordinary and necessary personal maintenance.

The amount of the loan is intended to be adequate, but not more than the student needs to meet the expenses previously mentioned. Whatever the actual need, however, the maximum loan is $1,000 for any one year, $5,000 in the aggregate.

No interest is charged while the recipient is a full-time student at an institution of higher education, or during any period not exceeding three years, that he is serving in the Armed Forces of the U. S.

Simple 3% yearly interest on the unpaid balance will be charged one year from the date the borrower ceases to be a full-time student. Repayment must begin not later than two years after the borrower ceases to be a full-time student at an institution of higher education. A schedule of installment payments commensurate with the borrower's financial status will be arranged at the time of his separation from the University. Repayment in accordance with a 10-year schedule of graduated periodic installments is the maximum time permitted for repayment.

Interested students should apply to the Bureau of Student Loans and Scholarships, 201 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota.

University of Minnesota Miscellaneous Scholarships

The University serves as administrator for a varying number of miscellaneous scholarship funds which total about $3000 yearly. From these funds, approximately 20 scholarships averaging $150 each are given annually. Awards from this fund may be received more than once (e.g. a student might receive one scholarship his sophomore year, another his junior year).

Recipients must have enrolled in medical school for one year, and are judged on the basis of need (55%) and scholastic achievement (45%). Most of the students receiving these awards, however, are in the upper-one-half of their class. Exceptions are made when there are fewer applications, extreme need, or other extinuating circumstances.

Medical students interested in these funds should contact the Bureau of Student Loans and Scholarships, 201 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota.

Miscellaneous Loan Funds

There are many miscellaneous loan funds devoted to the financial aid of medical students. These funds, however, generally are not large, and are based on a revolving repayment basis, with an average of only one loan available per school quarter from each loan fund.

These miscellaneous loans include funds from:

* George Eitel Foundation
* W. K. Kellogg Foundation
* Ramsey County Medical Auxiliary Loan Fund
* Women's Auxilliary of the Hennepin County Medical Society Student Loan Fund
* Francis M. Mooney Fund
* Stancil Toncheff Emergency Fund
* Jacob Cohen Loan Fund
* Robert A. Good Fund

*These funds are listed as examples only. Each has different requirements and stipulations. *None should be contacted directly, as qualifying students are referred by the University of Minnesota.*

Individual Sources:

All loan and scholarship seekers are urged to explore the private possibilities open to them through personal and family affiliations.

For example, contact your religious organization. Many denominations have loans available for their members. There are special funds available for Catholic students, Jewish students, Protestant students, etc. (e.g. one of the largest independent loan funds in the U. S. is maintained by the Methodist Church).

Other opportunities for financial aid can be received through labor unions, fraternal organizations, private industry, and various foundations and trusts.

All these possibilities should be considered.

End

Put your low-back patient back on the payroll

Soma relieves stiffness –stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, *fast!*

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

This was demonstrated by Kestler in a controlled study: average time for full recovery was 11.5 days with Soma, 41 days without Soma. (J.A.M.A. **172**:2039, April 30, 1960.)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. USUAL DOSAGE: 1 TABLET Q.I.D.

The muscle relaxant with an independent pain-relieving action

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THE ORIGIN OF OUR MEDICAL CADUCEUS

Originally the caduceus represented the wand of the messenger Hermes, entwined with garlands and mounted with wings; subsequently, however, it became the appropriate symbol of the medical profession. This involves a fascinating story.

Located near Serpens among the northern hemisphere constellations stands Ophiuchus, the Serpent Bearer, a familiar sky figure since 1200 B. C. According to ancient classical legend this configuration of stars represented the Greek hero, Aesculapius, fixed eternally in the heavens after his unfortunate and premature death at the hands of Zeus. Because of the prevalent superstition that a snake could shed an old skin for a new, the serpent that Aesculapius holds was considered sacred, symbolic of the constant regeneration of life.

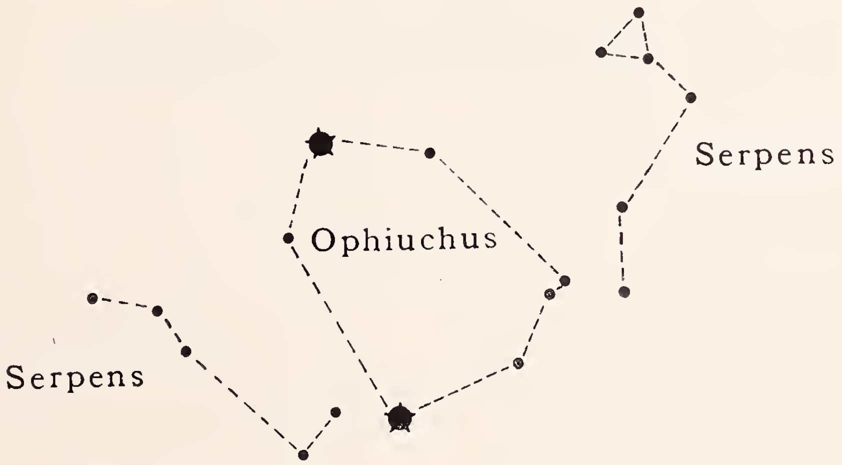
The mythical Aesculapius was the son of Apollo but was reared by the famous centaur, Chiron, renowned for his medical knowledge, which he in turn taught to the youth committed to his care. So great became Aesculapius' skill that not only could he cure the sick, as he did during the great plague in Rome, but he could also revive the dead, which he did in the case of the young Hippolytus, who was accidentally killed in a chariot wreck.

During this same legendary era another important figure in the Greek pantheon was Pluto, the god of Hades, the underworld abode of the dead. Naturally Aesculapius' miraculous faculty of resurrecting the dead was fiercely and jealously resented by Pluto, as it greatly diminished the prestige of his office. In his rage, therefore, he prevailed on Zeus to kill Aesculapius with a thunderbolt. This atrocious deed so infuriated Apollo that he in turn wreaked vengenance upon the innocent workmen who had been commissioned to make the thunderbolt, imprisoning them forever under Mount Aetna, from which the fumes of their workshop still erupt.

Later, at the earnest request of the grief-stricken Apollo, Aesculapius was placed in the heavens, immortalized among the stars. There between two sinuous segments of Serpens, his figure appears for any interested star-gazer to behold.

Such is the dramatic story behind the caduceus! Is it any wonder then that the insignia of medicine should significantly be the walking-stick of Aesculapius with the serpents entwined!

To the observer facing south-southwest at 10:00 p.m. in August Ophiuchus and Serpens would appear thus:



Our facts must be correct. Our theories need not be if they help us discover important new facts.—Hans Seyle

7:39
12:18
6:41
10:53

In acne—24-hour-a-day skin care with antibacterial pHisoHex®

(contains 3% hexachlorophene)

In acne, pHisoHex, antiseptic detergent, provides *continuous* antibacterial action against the infection factor. With exclusive, frequent use, pHisoHex builds up an effective antibacterial film on the skin that resists rinsing—lasts from wash to wash. pHisoHex augments any other therapy of acne.

When pHisoHex was used for washing by 42 patients with acne, "the results were uniformly encouraging. . . ."[1] "No patient failed to improve."[1]

pHisoHex cleans the skin of acne patients better than soap because it is forty per cent more surface active. It is a powerful emulsifier of oil, an action particularly beneficial in acne. Moreover, it cleans the orifices of the sebaceous glands, sweat glands and hair follicles more rapidly and more thoroughly than soap. pHisoHex lacks the potentially harmful qualities of soap. It is non-alkaline, nonirritating and hypoallergenic.[2]

For acne, prescribe pHisoHex—and get improved results.

pHisoAc® Cream dries, peels and masks lesions. Use it with pHisoHex washings to help prevent comedones, pustules and scarring. Contains colloidal sulfur 6 per cent, resorcinol 1.5 per cent and hexachlorophene 0.3 per cent.

pHisoHex is available in unbreakable squeeze bottles of 5 oz. and 1 pint—and in combination package with pHisoAc Cream.

1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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Medical Writing Awards

During the year of 1961 the Board of Editors of Minnesota Medicine, by virtue of the authority vested in them by the Council of the Minnesota State Medical Association, established a program of annual awards for excellence in medical writing.

Eligible for these awards are the authors (exclusive of members of the editorial board) of scientific articles or editorials which have been published in Minnesota Medicine during the preceding year. The first awards for excellence in medical writing were made at the 1962 Minnesota State Medical Association meeting and were selected from materials published in Minnesota Medicine during 1961.

It was the great pleasure of the Board of Editors to award first place plaques to Drs. Lloyd D. MacLean, Robert S. Flom and Donald H. Peterson, Anchor Hospital, St. Paul, for their article entitled "Diagnosis and Treatment of Arterial Injuries." Certificates for excellence in medical writing were further awarded to the authors who are listed below with the titles of their articles, felt to be particularly meritorious and outstanding by the Board of Editors.

Congenital Aortic Stenosis. Franklin De Russo, M.D. Mark May M.D.	Hahnemann Medical College & Hospital Philadelphia, Pennsylvania
The Nature of the Dumping Syndrome. Raymond C. Read, M.D.	Veterans Administration Hospital Fort Snelling, Minnesota
Treatment of Acute Renal Failure. Eugene F. Bernstein, M.D. Robert K. Ausman, M.D. John A. Blum, M.D. Raymond C. Bonnabeau, M.D. Raymond C. Doberneck, M.D. George A. Pankey, M.D. Arnold Walder, M.D. Milton P. Reiser, M.D.	Department of Surgery, Division of Urology University of Minnesota Minneapolis 14, Minnesota
Thyroglossal Cysts and Sinuses in Children. Paul M. Brown, M.D. Edward S. Judd, M.D.	Mayo Clinic Rochester, Minnesota
Calming the Irritable Infant with a Tonal Device. Jay R. Olsen, M.D. Edward N. Nelson, M.D.	3017 Bloomington Avenue Minneapolis, Minnesota
Untoward Reactions to Antibiotics. Byron L. Riggs, Jr., M.D. Joseph E. Geraci, M.D. Louis E. Prickman, M.D.	Mayo Clinic, Section of Medicine Rochester, Minnesota
Tatooing. Mr. Eugene M. Townley Identification Officer	Police Division Cincinnati, Ohio

Over the years, the members of the State Medical Society, through the agency of Minnesota Medicine, have had the opportunity to read the writings of a large number of their colleagues. Articles for publication have been and continue to be submitted in the fine traditional spirit of the physician writer who asks nothing in return for these contributions to the knowledge of the profession and hence the welfare of patients, other than perhaps the approbation of his peers.

Minnesota Medicine is honored to have this new opportunity to make an overt acknowledgement of appreciation to all of it's distinguished authors.

Stuart W. Arhelger, M. D.
Minneapolis, Minnesota

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. . . in minutes

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. . . works with nebulizer speed—provides four-hour protection

One NEPHENALIN tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.

Dosage: Hold one NEPHENALIN tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.

Supplied: Bottles of 50 tablets. For children: NEPHENALIN Pediatric, bottles of 50 tablets.

Caution: Do not administer NEPHENALIN with epinephrine. The two medications may be alternated at 4-hour intervals. NEPHENALIN should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. THOS. LEEMING & CO., INC., New York 17, N.Y.

The Blue Shield

The following is the text of a speech before the Corporate Membership on May 21, 1962 at the Leamington Hotel, Minneapolis, Minnesota given by Mr. Thomas Paton, Executive Vice President, Minnesota Blue Shield.

Each of you has received a copy of the Annual Report of the Minnesota Medical Service for 1961. In it are statements by Drs. Hammes, Cranmer, Bayley and myself. The Report also contains complete financial statements, as well as a summary account of the past year's enrollment effort.

Instead of reading my printed statement in the report, which you can read at your leisure, I should like to spend the few minutes that are available to me, affirming what I believe to be a conviction which you doctors of Minnesota hold in common. It is the conviction that freedom and responsibility are the right and left hands of the practice of medicine.

So there will be no criticism that I have indulged in shallow phraseology, let me read the words of General Omar Bradley: Quote — "Freedom — no word was ever spoken that has held out greater hope, demanded greater sacrifice, needed more to be nurtured, blessed more the giver, damned more its destroyer; or came closer to being God's will on earth. *May* Americans ever be its protector!" — end quote.

No words of mine could match the eloquence of that statement. And no occasion — this or any other — can manifest from me greater emotion, than when I read Bradley's words. Those words are strong, and they are true.

In May of 1961 the Minnesota House of Delegates met and adopted the California Relative Value Scale for Blue Shield's use, and the House authorized Blue Shield to set up new contracts with income limits up to $7500 as the basis of eligibility for service benefits. This action was recognition of our economic inflationary spiral.

By these two actions the House of Delegates announced to the people of this State that our doctors are responsive to the needs and desires of the people. By taking this action in a manner that reflects the freedom in the private practice of medicine, the doctors of Minnesota also announced that they would assume the responsibility that is inseparable from these decisions.

Just what practical significance did these decisions have? We can sing the praises of freedom in the manner of philosophers. But unless it changes life for the better, it remains a poetic symbol and little else.

Let me assure you that these were practical decisions, because here in the Twin Cities we have the highest index of increased medical care cost since 1949 of any other principal urban area in the United States. The reasons for this situation are as complexly social and economic as is the high standard of medical practice itself. There can be no compromising the quality of medicine, nor can there be a single denial to a single patient of the fruits of medical progress. Yet, the public is looking for — perhaps demanding — stability in their medical care costs.

By re-affirming your belief in the service principle which underlies our Blue Shield plan, and which guarantees to under-income patients predictability of cost for their medical expenses, you share not only your knowledge of medical science with those who need it, you share with your patients the freedom which is essential to the healing relationship.

What does it mean to stand at the outpost of freedom? It means exactly what General Bradley said: Freedom is hope, sacrifice, cultivation, even battle. And, let me add — discipline and responsibility.

Continued

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The AMA House of Delegates two years ago in Atlantic City set out a new declaration as to the meaning of the expression "Freedom of Choice of Physician." It now reads that they support the doctrine that allows people not only the right to choose their doctor, but the right to choose the system under which they shall acquire their medical care.

The Federal Employees Medical Benefits Program is a living "case history" of this doctrine. Two million employees of the Federal Government have the freedom to choose between the nationwide service plans of Blue Cross-Blue Shield, or the indemnity plans of the Aetna Insurance Company. In New York they can choose the HIP Plan and in California the Kaiser Plan.

I make a point of this development only to demonstrate that such generally accepted words and expressions have a way of taking on a new meaning as we progress through the years of inevitable change. And I wish to point out also, the heavy responsibility the AMA took upon itself when this decision was made.

Why is it that we must change to a system of prepaying our medical expenses? Why must the people of our State and country have a predictability of their medical care costs? Is it really because paying for health care is so uniquely different? Personally, I don't think so. Mostly it's because our entire economy has been geared to time payments. We buy our homes on a mortgage — our cars on a bank loan — refrigerators, T.V. sets — hair dryers — and even trips to Europe are paid through installment buying systems.

No wonder the American people want — expect — and feel they have a right to get their health care paid for on the same basis. Just consider the tremendous force behind this general change in our buying habits. And ask yourself — Can Medical Care escape the on-rushing tide? Probably not — but medicine can — and is doing something about it — By determining the method that is to be used. Which is through a voluntary system — through Blue Shield. 47 million Americans have Blue Shield, which is strong evidence of the success of organized medicine's effort to give the public what it wants. The recent actions taken by the AMA and State Medical Societies to support a nationwide Senior Citizen Plan certainly add to this tremendous accomplishment. And yet, this great work could not have been accomplished without sacrifice and without the assumption of responsibility on the part of the medical profession.

The public must know that the medical profession is equipped to deal with disease, whether this disease be social, political, economic or physiological. The pathology of social planning and economic determination cannot be dismissed by crying, Foul Play! All of us in the health care field must pull collectively together, because we need each other's help. We must have the intelligence to meet every conceivable situation, and we must not be swayed by emotional feelings when factual knowledge is the real power. Furthermore, we must keep our differences of opinion within the family, and not weaken our position by public exposure of disagreement.

Let us not let "old man lethargy" cast his nets over us as he has so many American businessmen. It is true that the United States Chamber of Commerce is alert to the free enterprise protection medicine is giving every businessman, from shopkeeper to tycoon. But, it is also true that few businessmen, right here in our midst, have "lifted a finger" to give the medical profession a helping hand — even though it would be in their own direct interest in preventing governmental price fixing and price control.

At one time, a broken crown was treated with vinegar and brown paper. Today the broken will of the American public is being treated with powerful doses of political hypnotism from Washington, and fiscal gadgetry from commercial insurance companies. Let us protect freedom, as General Bradley says, by practicising it. Let us protect freedom from a sound base — both morally and fiscally — through service benefits and community rating.

I have taken upon myself the burden of exposing my viewpoint, publicly and without shame. Some of you may say that I wave the flag pretty hard. But I do so for good reason. Because, contrary to some feeling within the profession, Blue Shield, gentlemen, is your agency, and we are your agents. When we are invited by the Governor to discuss health coverage for the State employees, as we were only a month ago, we go not as salesmen for some

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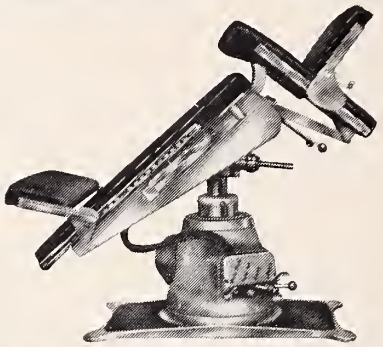

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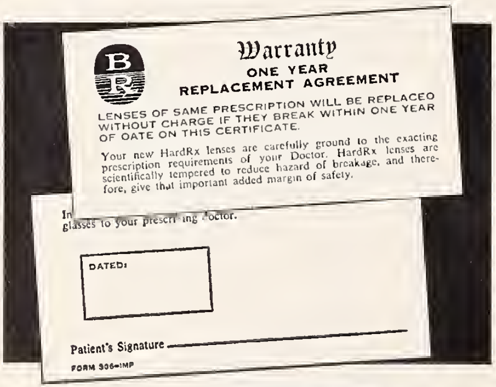

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commercial company, but as representatives of the medical profession of Minnesota. When we call ourselves, the Doctor's Own Plan, we do more than advertise, we symbolize the American practice of medicine.

As a newcomer in your midst, I am encouraged by what I see, and I am inspired by your example. We will make mistakes, because we will experiment. We will disagree from time to time for such is the road to truth and progress. And we will ask questions only to keep our goal clear. We will work on your behalf to protect freedom, not only for ourselves, but for all men, for only then can we do our jobs properly.

I am proud to have had this opportunity to share in the important deliberations of this 1962 Corporate meeting.

BLAMES SYPHILIS INCREASE ON MALE HOMOSEXUALS

In the June issue of GP magazine, a Los Angeles physician says that there has recently been "a phenomenal increase" in homosexually transmitted venereal infections.

Dr. Tarr points out that homosexuals "are notoriously imaginative in their sex behavior" and for this reason, venereal disease lesions may be found anywhere on the victim's body.

The primary and secondary syphilis rate has increased as follows in the cities named. All rates are per 100,000 people:

	1956	1960
New Orleans	3.5	62.0
Washington, D. C.	4.3	57.6
Miami	14.0	64.0
New York City	6.9	26.9

ANACIN NOT A FOLK REMEDY

Red Owl Stores and Groves Kelco, a wholesale distributing firm, must pay all court costs totalling $19,190.15 stemming from the recent Minnesota Supreme Court decision involving illegal sale of 18 drugs, it was revealed.

This basic issue concerned the Supreme Court's ruling that 18 products, such as Anacin and Alka-Seltzer, were drugs and medicines.

The Supreme Court ruled that the 18 products were not "folk remedies but complicated drugs having toxic ingredients." This ruling determined that unlicensed sale of the products violates state law.

The state of Minnesota will be reimbursed $1,458.90, and the Pharmaceutical Association will be repaid $17,731.25 by Red Owl and Groves-Kelco in accordance with the taxation of costs by the Supreme Court.

MINNESOTA SURGICAL SOCIETY AWARD

An award of $500.00 will be given annually to a surgeon in training, whether he be a medical student, intern, or resident for excellence in clinical surgery. A manuscript on a surgical subject must be submitted in support of the application for the award. The winning manuscript and any others will be considered to be available for the program of the society at the discretion of the program committee. Submit manuscripts to:

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Meetings and Announcements

AUGUST

West Virginia State Medical Association 95th Annual Meeting, August 23-25 at the Greenbriar Hotel, White Sulphur Springs, West Virginia. Contact: Executive Secretary, West Virginia State Medical Association, Box 1031, Charleston 24, West Virginia.

Second National Northwest Summer Conference "The Special Child in Century 21" to be held in Seattle, August 28-September 1, at the Health Sciences Auditorium of the University of Washington. Contact: Jerome Hellmuth, 113 Madrona Place East, Seattle.

SEPTEMBER

International College of Surgeons 13th Biennial Congress at Waldorf-Astoria Hotel, New York, September 9-13. Contact: International College of Surgeons, Chicago.

Washington State Medical Association 73rd Annual Meeting in Spokane, September 16-19. Contact the W.S.M.A. in Seattle.

University of Colorado School of Medicine Postgraduage Course on Fibrinolysis, September 17-19, and Pulmonary Disease, September 24-28. Contact: The University.

New York University Post-Graduate Medical School Course on Occupational Medicine, September 17-November 9. Write: NYU Post-Graduate Medical School, 550 First Avenue, New York.

University of Colorado School of Medicine Conferences on "Research Seminar on Fibrinolysis" September 17-19, and "Pulmonary Disease" September 24-28, in Denver. Contact the University.

American College of Chest Physicians postgraduate course "Recent Advances in Diagnosis and Treatment of Diseases of the Heart, September 17-21, Warwick Hotel, Philadelphia. Contact: Murray Kornfeld, Executive Director, Chicago.

University of Illinois College of Medicine, Department of Otolaryngology postgraduate course in Laryngology and Bronchoesophagology September 24-October 6. Contact: University, Chicago.

Methodist Hospital, St. Louis Park, Minnesota Symposium on Chest Diseases September 15. Contact: Jerome T. Grismer, M.D. at Methodist Hospital. Symposium has been approved by AAGP for seven hours credit, Category I.

Twelfth International Congress of Dermatology in Washington, D.C. September 9-15. Contact: Stephen T. Donohue, 420 Lexington Ave., New York.

OCTOBER

American College of Surgeons 48th Annual Clinical Congress, October 15-19, Atlantic City, New Jersey. Contact: American College of Surgeons, Chicago.

American Cancer Society 1962 Scientific Session, Biltmore Hotel, New York, October 22-23. Contact Society in New York City.

University of Illinois College of Medicine Department of Otolaryngology Postgraduate program October 20-26. Contact the University.

Animal Care Panel 13th Annual Meeting, October 2-5, at the Conrad Hilton Hotel in Chicago. Contact: Animal Care Panel, Argonne, Illinois.

American Public Health Association's 90th annual meeting October 15-19, Miami Beach, Hotel Fontainebleau. Contact: Dr. T. E. Cato, Director of Public Health, Dade County, Florida.

Occupational Health Congress, October 2-3, Somerset Hotel, Boston, Mass. Contact: AMA, Chicago

Scientific Assembly of Interstate Postgraduate Medical Association, Palmer House, Chicago, October 1-4. Contact: Interstate Postgraduate Medical Assn., Box 1109, Madison, Wisconsin.

American College of Chest Physicians Council Postgraduate Course on Clinical Cardiopulmonary Physiology, October 22-26, Knickerbocker Hotel, Chicago. Contact American College of Chest Physicians, Chicago.

American Medical Association National Congress on Mental Illness and Health in Chicago, October 4-6. Contact: AMA-Chicago.

Animal Medical Center Symposium on Human and Animal Diseases, October 10-12 at Hotel Waldorf-Astoria, New York City. Contact: The Animal Medical Center, New York

ANNOUNCEMENTS:

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; September 10-28; October 22-November 9; November 26-December 14.

University of Minnesota medical continuation courses: September 13-15 on Coroners and Medical Examiners; October 2-4 on Pediatrics; October 11-13 on Dermatology; October 29-November 2 on Radiology; November 14-16 on Opthalmology; November 15-17 on Orthopedics; and November 29-December 1 on Cardiovascular Diseases.

Physician's Diary

Dr. Bayard T. Horton, Rochester, was re-elected president of the American Association for the Study of Headache at its annual meeting in Chicago. **Dr. Donald C. McIlrath** has joined the Mayo Clinic as a staff consultant.

* * *

Dr. I. L. Oliver has donated the Oliver Clinic at Graceville to the Graceville Clinic Committee, and two new doctors have joined the clinic: **Drs. Russell Popoff** and **Harley Bergner.**

* * *

Dr. C. W. Moberg, Detroit Lakes, is the new president of Minnesota Blue Shield. **Dr. P. G. Hoeper,** Mankato, is vice president; **Dr. O. I. Sohlberg,** St. Paul, secretary, and **Dr. E. C. Bayley,** Lake City, treasurer.

* * *

Eugene Murtagh, President of Druggists Mutual Insurance Company, Algona, Iowa, announced the election of Gordon K. Schmidt as assistant secretary and Richard D. Godfredsen as assistant treasurer.

* * *

Dr. John S. Lundy, founder of the Section of Anesthesiology of the Mayo Clinic in 1924, received a certificate of recognition for distinguished service from the Northwestern University Alumni Association last month.

Dr. Richard H. Searle of Watertown has taken over the practice of **Dr. William F. Furlow** who has gone to Rochester to work under a fellowship in urology.

* * *

Dr. L. O. Underdahl, Mayo Clinic, was re-elected secretary of the American Diabetes Association at its annual meeting in Chicago.

* * *

Dr. O. J. Seifert was honored recently for his 50 years as practicing physician and surgeon in New Ulm, and **Dr. Frank J. Heck,** member of the staff of Mayo Clinic, will retire from active duty this month.

* * *

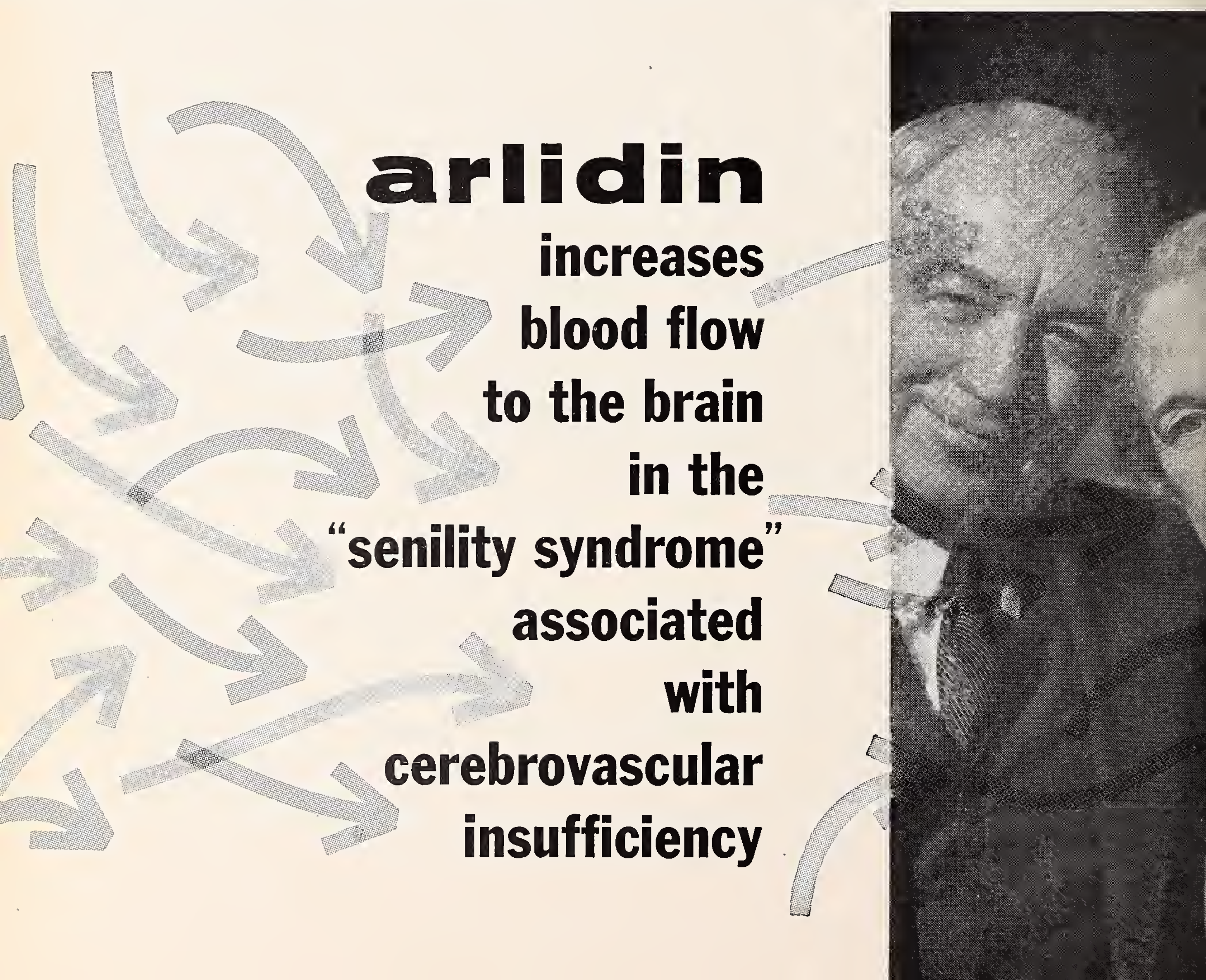
Dr. Lowell Henderson, member of the Mayo Clinic staff, was elected a member of the board of regents of the American College of Allergists at the annual scientific congress in Minneapolis recently.

* * *

Dr. Frank H. Krusen, director of the Kenny Rehabilitation Institute in Minneapolis, will receive the honorary degree of doctor of medicine from the Justus Liebig University at Giessen, Germany.

* * *

Dr. Richard E. Perry, a fellow in orthopedic surgery in the Mayo Foundation, left Rochester to go to Saigon where he will spend the next year training Vietnamese physicians in orthopedic surgery under Project HOPE.



A public service research grant for respiratory studies, totaling $121,213, was awarded to **Dr. Anderson C. Hilding** of Duluth and St. Luke's Hospital.

* * *

Dr. C. L. Oppegaard of Crookston, past president of the the Minnesota State Medical Association, was the principal speaker at the dedication of the new Convalescent Nursing Home Addition of the Greenbush Community Hospital in Greenbush.

* * *

The Minnesota Medical Foundation has received a major endowment gift which will provide for a permanent annual scholarship award in memory of the late **Dr. Charles N. Hensel.** It will be worth $750 each year to a medical student who demonstrates unusual academic achievement and financial need. The endowment gift established the "Charles Norton Hensel Memorial Scholarship" and represents the first endowed scholarship in the history of the Foundation.

* * *

Dr. Robert Olson of Canby was elected president of the Canby Jaycees recently.

* * *

A speaker's bureau which will aid community organizations in locating speakers has been named by the Zumbro Valley Medical Society, **Dr. A. B. Hayles,** president, announced recently. Heading up the bureau will be **Drs. F. E. Donoghue, P. E. Bernatz, John Mayne,** and **D. G. Hanlon** of the Mayo Clinic.

Dr. J. E. Ponterio and **Dr. P. J. Adams** have opened up the new Shakopee Medical Center, in Shakopee, and **Dr. John A. Hetzler** of Pine Island has joined **Dr. T. O. Wellner** in Rochester.

* * *

Dr. E. Covell Bayley of Lake City was awarded the Alumni Achievement Award by Carleton College, Northfield, on occasion of the 40th class reunion of Dr. Bayley.

* * *

Dr. L. E. Prickman, head of a section of medicine in the Mayo Clinic, has retired from the clinic and will settle in Rochester after a short trip to Philadelphia, Pa., to visit a daughter.

* * *

Dr. Magnus C. Petersen of Rochester, former superintendent of the Rochester State Hospital has been appointed associate director of psychiatric education and research at the Cherokee Iowa State Mental Institute.

* * *

Dr. Robert A. Good, research professor of pediatrics, University of Minnesota, reported studies supporting the hypothesis that the thymus is an important factor in immunity. Rabbits and mice thymectomized at birth are found to develop a marked loss of immunological capability. They are less able to form bacteriophage neutralizing or precipitating antibodies. Furthermore, the thymectomized mice are able to accept grafts from totally unrelated strains of mice which normally reject such foreign tissue.

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references: 1. Madow, L.: Penn. M. J. 62:861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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Dr. M. A. Burns of Milan was recently honored for sixty-five years of service to his community.

* * *

Dr. Leonard W. Larson, immediate past president of A.M.A., was among the five men named recently as honorary members of the American Hospital Association.

* * *

Dr. Davitt A. Felder, St. Paul cardiovascular surgeon, was recently a guest speaker at the Range Medical Society's meeting at Virginia. His topic was on "Vascular Surgery."

* * *

Dr. I. L. Oliver, Graceville, was reappointed by Governor Andersen to the State Board of Medical Examiners.

* * *

Dr. John F. Butzer will join the Mankato Clinic staff as a pediatrician, and **Dr. Milo Hanson** will join the Little Falls Clinic's Department of Internal Medicine. **Dr. G. M. A. Fortier** will head the Clinic's Division of Surgery.

Three scientific exhibits prepared by members of the staff of the Mayo Clinic received awards at the annual meeting of the A.M.A. in Chicago. "The Pulmonary Manifestations of Systemic Disease" by **Drs. Matthew B. Divertie, Arnold L. Brown, Jr.,** and **David M. Witten,** was given the bronze medal. "Vascular Clues to Occult Diseases" by **Drs. John A. Spittell, Jr., Alexander Schirger, Edgar G. Harrison, Jr.,** and **Arthur H. Bulbulian** was awarded a certificate of merit.

* * *

Honorable mention was given to **Drs. Elizabeth Mussey, John S. Welch** and **Arthur H. Bulbulian** for their exhibit "Preinvasive Carcinoma of the Cervix."

* * *

Dr. Lewis Hanson of Frost was honored at special ceremonies held in Bricelyn for his many years of service to his community.

* * *

Dr. W. R. Kostick, Fertile, and **Dr. Fred C. Westerman,** Montgomery, will retire from active practice.

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *469 Lowery Medical Arts Bldg., St. Paul 2, Minn.*

Classified advertising rates are twenty (20) cents a word; minimum monthly charge $5.00; key number, fifty (50) cents additional. Remittance should accompany order.

LITERATURE SEARCHING SERVICE — Librarian experienced in medical field will prepare bibliographies, write abstracts, catalog personal libraries. Contact: Mrs. Harry Krakauer; 2040 Yorkshire Avenue; St. Paul.

WANTED: General practitioner desirous of earning his Social Security credits. Practice largely office and hospital. Salary equivalent to partnership. Prefer age 55 or over. Town of 3500 within 60 miles of Twin Cities — Country Club — Swimming Pool. Come out and grow into retirement gracefully with a kindred soul who believes the cemeteries are full of eager beavers. Reply to Box 207, care of MINNESOTA MEDICINE, St. Paul.

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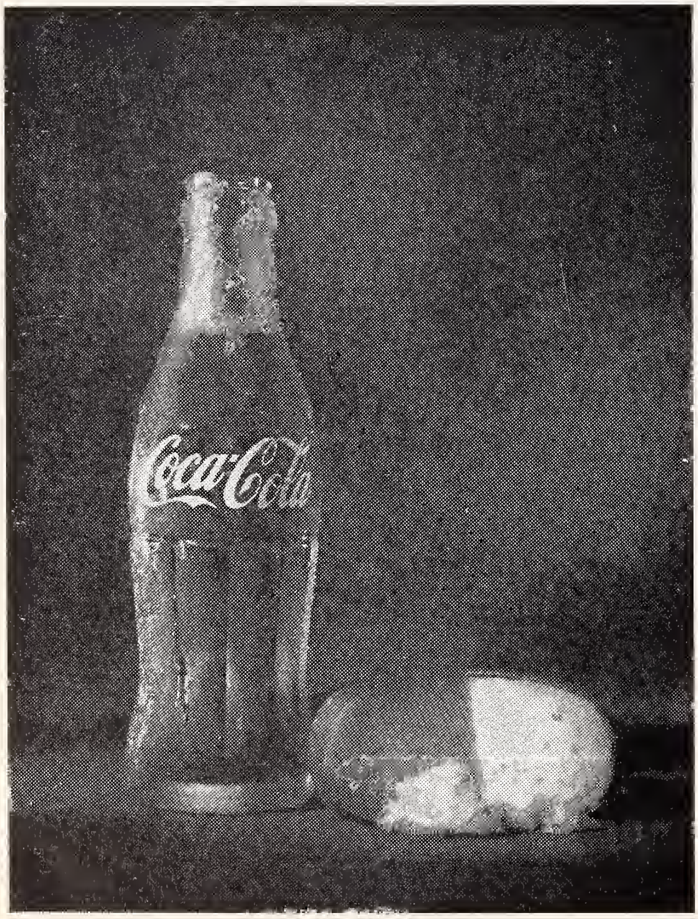

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September, 1962

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REFERENCES: (1) Roseman, E.: *Neurology* **11**:912, 1961. (2) Bray, P. F.: *Pediatrics* **23**:151, 1959. (3) Chao, D. H.; Druckman, R., & Kellaway, P.: Convulsive Disorders of Children, Philadelphia, W. B. Saunders Company, 1958, p. 120. (4) Crawley, J. W.: *M. Clin. North America* **42**:317, 1958. (5) Livingston, S.: The Diagnosis and Treatment of Convulsive Disorders in Children, Springfield, Ill., Charles C Thomas, 1954, p. 190. (6) *Ibid.*: *Postgrad. Med.* **20**:584, 1956. (7) Merritt, H. H.: *Brit. M. J.* **1**:666, 1958. (8) Carter, C. H.: *Arch. Neurol. & Psychiat.* **79**:136, 1958. (9) Thomas, M. H., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, The Williams & Wilkins Company, 1956, pp. 37-48. (10) Goodman, L. S., & Gilman, A.: The Pharmacological Basis of Therapeutics, ed. 2, New York, The Macmillan Company, 1955, p. 187.

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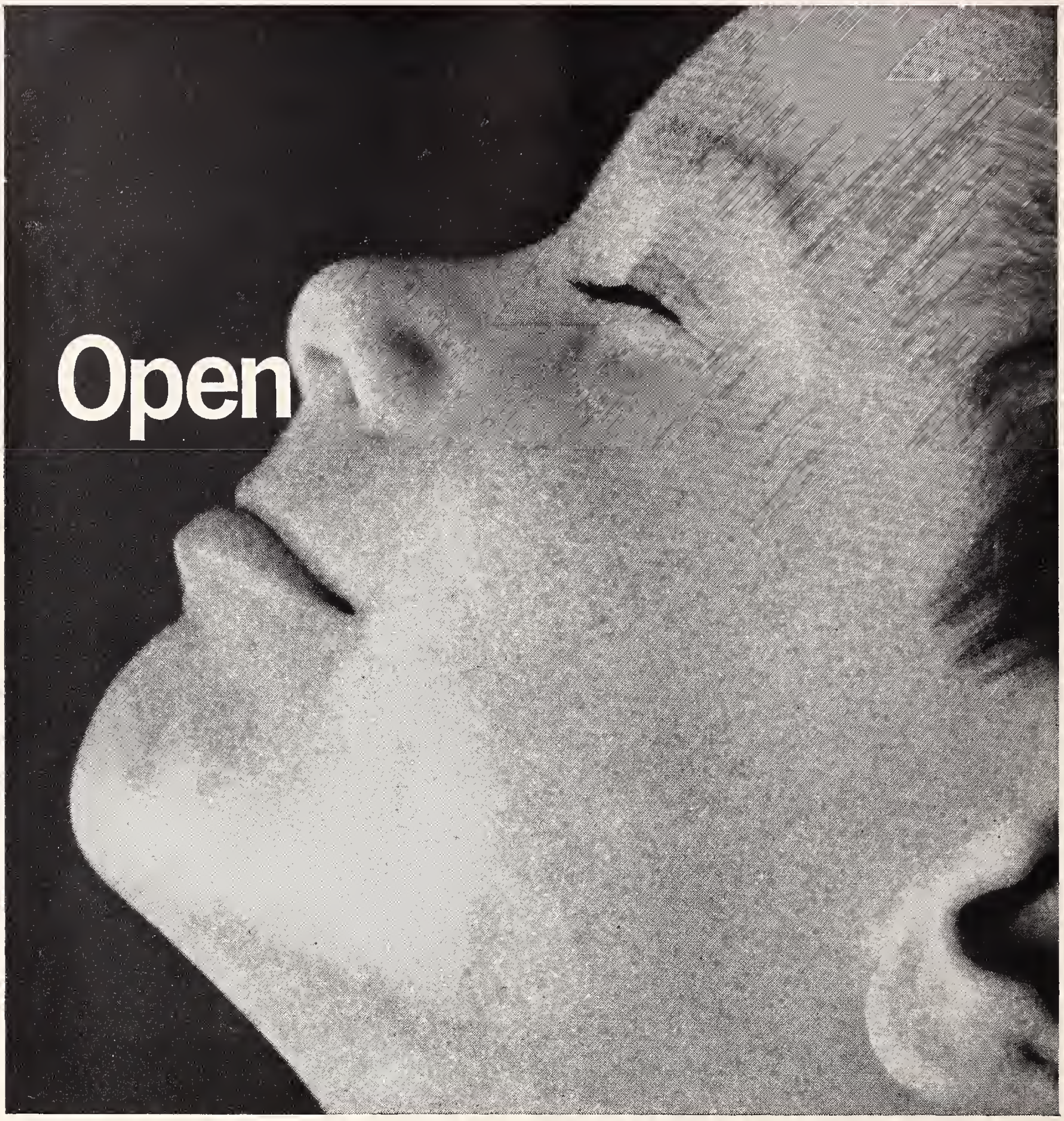

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Illustrations (photographs, tables, and graphs) should be submitted on separate sheets of paper and not combined in the text. Instructions for combining photographs are acceptable.

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President's Letter

THE AMA AND CURRENT PROBLEMS FACING MEDICINE

At the recent meeting of the House of Delegates of the American Medical Association many important problems were considered. I should like to review certain of the actions taken.

As might be anticipated, the provision of health care for the aging received much attention. Resolutions re-affirmed our belief that the Kerr-Mills legislation is well suited to satisfy the needs of the occasional patient who requires financial assistance during a costly illness. The concept of insurance linked to the social security system was rejected as one which ultimately would lead to unwarranted governmental control over the practice of medicine. It will be recalled that the Minnesota House of Delegates passed a resolution urging the application of Kerr-Mills legislation in Minnesota. A measure introduced into the House of Delegates of the American Medical Association advised nonparticipation on the part of physicians, should the King-Anderson Bill be passed, but no action was taken. It was believed that our Principles of Medical Ethics well cover those issues involved. In another action principles were outlined for use when public funds are employed in the purchase of voluntary prepayment insurance protection for aging and other groups to meet the cost of health care.

Membership of the Board of Trustees of the American Medical Association is to be increased by four persons, including three additional elected trustees and the immediate past president of the Association. Such increases will allow more personnel for the expanding work of the Association and will enhance administrative continuity during the changing of officials. These actions will require revisions of the constitution and bylaws before they can be put into effect.

The right of the American Medical Association to discipline a member was clarified. This responsibility will supplement the right heretofore exercised by component state and county societies. Appropriate action can be instituted at the request of a component society and constituent association or with the permission of the state association to which the member concerned belongs. The disciplinary action may take the form of censure or suspension or expulsion of a physician from membership, but the cause must be an infraction of the constitution or bylaws of the American Medical Association or a violation of its Principles of Medical Ethics.

Recognition was denied the "American Board of Abdominal Surgery" as a specialty board. Likewise disapproved in principle was the establishment of specialties based primarily on anatomic regions of the body.

A broad program for mental health was announced, with the planning of a major congress to be held in October. This program has many facets, including public education, the furtherance of understanding and cooperation by all components of the profession, the recruitment of personnel, the extension of active rather than custodial therapy for mental illness and other fine objectives.

The House of Delegates reaffirmed the prerogative and duty of the American Medical Association to adopt and interpret principles of medical ethics. New problems in this respect were defined in resolutions involving surgical assistants and the relationship between the American Medical Association and the American College of Surgeons. The policies elaborated by the American Medical Association in 1961 were reannunciated.

Many other measures were considered as the policy-making body of the American Medical Association deliberated medical education, the employment of handicapped, the operation of airport medical services, automobile seat belts, and the widespread activities of the Association.

Yours sincerely,

Haddon Carryer

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President
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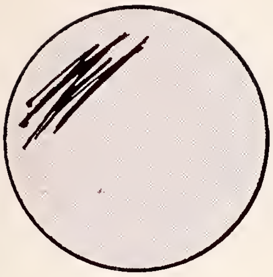


Fig. 1. The swab is rubbed over a small area of the plate.

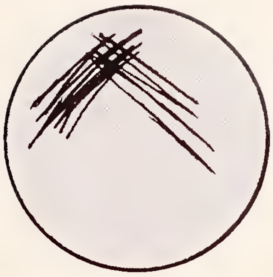


Fig. 2. A flamed and cooled wire loop is used to make the first streak. At the end, dig into the agar with the loop.

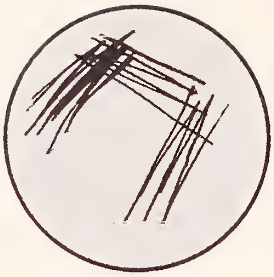


Fig. 3. Flame and cool the loop again—the second streak is made.

Office Bacteriology

ARTHUR E. DAVIS, JR., M.D.*

Raleigh, North Carolina

While complete medical bacteriology is a complex field requiring extensive experience, a great deal of practical bacteriology can be done with a minimum of equipment and no special training. The following article describes thoroughly the procedures and equipment needed for performing office procedures of great clinical value.

OFFICE BACTERIOLOGY is useful, practical, and inexpensive both for the patient and for the physician.

With the introduction of broad spectrum antibiotics in 1948, the prediction was made that bacteriology would be a thing of the past. We all know that the opposite has proven to be the case. With the development of resistant strains of bacteria and the increased frequency of antibiotic-resistant infections, the work of the bacteriologist has more than doubled. This paper concerns practical office bacteriology and is not intended to represent ideal or institutional bacteriology. We all remember the complicated fermentation and biological reaction charts we were required to memorize in medical school. Our exposure to bacteriology gave most of us the conception that a fully-equipped diagnostic laboratory was necessary for the performance of even simple bacteriology studies. This is not true. Simple procedures, simple equipment, and common sense allow the practice of office bacteriology to be done by every doctor. The results of this laboratory work can be relied upon completely if simple principles are followed.

---

*Pathologist, Rex Hospital

Areas of Usefulness

There are three areas with which office bacteriology is concerned. The first is throat infection; the second, urinary tract infection; and the third, surface infections, such as those involving skin, wounds, abscesses, ears, and eyes.

Throat Infections:

The only thing with which we are concerned is the identification of a Beta hemolytic Strept. Cultural studies are indicated in every child with a sore throat, because the accuracy of the diagnosis on clinical grounds alone is only 50 per cent. If a Beta hemolytic Strept. is identified, the child should be treated for a minimum of ten days with an appropriate antibiotic, which is usually penicillin. Hemophilus infections constitute less than 1% of pharyngitis. The identification of diphtheria and whooping cough is not possible except at centers, such as the State Board of Health.

Urinary Tract Infections:

Bacterial pyelonephritis is one of the most common clinical diagnoses that are missed. Various autopsy studies have demonstrated that up to 20% of unselected patients dying in the hospital have active bacterial pyelonephritis. This problem is especially important in diabetics. It is important to identify the organism in pyelonephritis and to treat until the cultures are clear. The sequlae of hypertension and of chronic suppurative pyelonephritis with renal insufficiency and hydronephrosis are well known to all of us. The organisms that commonly cause pyelonephritis can be identified with very simple procedures.

Surface Infections:

The other areas as skin, eyes, and ears are important now because of the increased incidence of antibiotic-resistant staphylococcal infections.

This system of bacteriology has four variables:

1. The blood agar plate.
2. The E.M.B. plate (Eosin-Methylene-Blue).
3. The Gram stain.
4. The interested doctor.

No other reagents, tests, or chemicals are needed. Next we will systematically discuss the various techniques in their order of performance.

Collection of Specimens

1. *Throat cultures:* The tonsillar areas and the posterior pharynx are visualized, using a tongue blade. These areas are rubbed with a sterile cotton swab. Only the blood agar plate is used.
2. *Urine cultures:* A mid-stream specimen is collected in a sterile container. Except in severe vulvovaginitis, catheterization is not necessary. In the female, cleanse the area with an antiseptic.
3. *Skin, Eyes, Ears, Etc.:* Specimens both from the exudate and from the adjacent areas should be taken. If the exudate alone is cultured, the bacteria will often be nonviable because of the effect of the leukocytes.
4. *Stool cultures and other cultures:* These are simply not practical in the office. If a stool culture is indicated, the specimen should be sent to the State Board of Health where well-trained people will efficiently and promptly examine it.

Direct Smear

The immediate examination of the direct smear stained with Gram's stain is extremely helpful. With experience, the correct diagnosis can usually be made from the examination of the direct smear. The advantages are that pathogens can be differentiated from the contaminants that may later appear on the plates, therapy can be started much sooner, and valuable time is not wasted.

Remember: 1. *Swab off the surface before taking smears. This eliminates superficial contaminants.*
2. *Don't allow the large bacilli often seen on direct smear to confuse you. These are almost always contaminants.*

Before any clinical bacteriology is possible, smears and cultures from at least twelve normal throats must be studied. One must know the normal flora of the throat and must not confuse these with the pathogens.

Preparation of the Plate

The specimen should be plated as soon as possible, as bacteria are very delicate creatures. Drying or chilling can be fatal. The two most common errors in inoculation of plates consist of too heavy or too light inoculation. The reason the plates are inoculated is to identify individual colonies of bacteria. Excess growth makes this impossible. Improperly prepared plates are absolutely worthless.

Semi-Quantitative Urine Culture

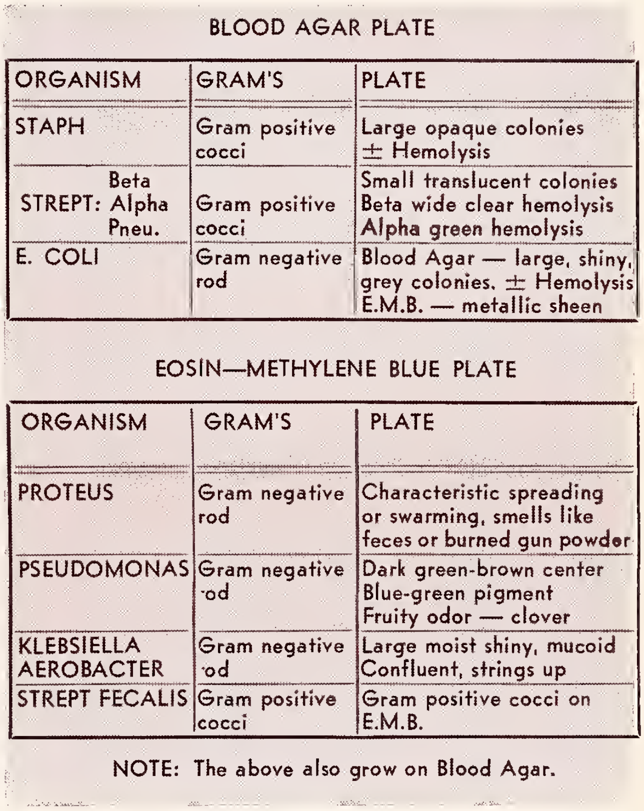
1. Mid-stream specimen (*fresh,* unspun urine).
2. Make a microscopic examination (Gram's). Contaminants are rarely seen on microscopic examination.
3. Using a flamed, sterilized, and cooled platinum wire loop deliver 0.01 ml. *inoculate one loopful of well-mixed urine to: Blood Agar
   E.M.B.
4. Streak.
5. Inoculate 37° C. overnight.
6. When the plates are read, estimate the number of colonies. One to ten colonies per plate can be regarded as a contaminant. Over ten usually means infection. Most infected urines, however, show colony counts of over a hundred. It is not uncommon to have mixed Gram-negative rods on urine cultures, such as E. Coli and Proteus, etc.

Incubation

A standard incubator purchased from a medical supply house is ideal, but certainly not necessary. Incubators can be made out of bread boxes and other containers. A very practical and inexpensive incubator can be made out of an insulated milk box. This one can be made in approximately an hour and thirty minutes for a cost of less than six dollars. The 15-watt light bulb will maintain a constant temperature of 99° F. Although a thermostat does not protect the box temperature, an ordinary thermometer is all that is necessary for control. The plates should be incubated overnight, and most pathogens can be read in eight to twelve hours. The average plate is read again at 24 hours but kept for at least 48 hours before being discarded.

Interpretation of Cultures

The identification of only three organisms will take care of 95% of bacteria seen in the office. These organisms are the Beta hemolytic strept., the staphylococcus, and E. Coli. This system will also allow the identification of most of the other organisms with very little trouble. The identification of the other organisms is often only for interest and to maintain ones proficiency in bacteriology. The following table demonstrates how nine different organisms are identified on the system using the two plates and the Gram Stain. A description of the gross and the microscopic characteristics of bacteria is found in the appendix. With experience, the simplified table will be adequate.



BLOOD AGAR PLATE

ORGANISM	GRAM'S	PLATE
STAPH	Gram positive cocci	Large opaque colonies ± Hemolysis
Beta STREPT: Alpha Pneu.	Gram positive cocci	Small translucent colonies Beta wide clear hemolysis Alpha green hemolysis
E. COLI	Gram negative rod	Blood Agar — large, shiny, grey colonies. ± Hemolysis E.M.B. — metallic sheen

EOSIN—METHYLENE BLUE PLATE

ORGANISM	GRAM'S	PLATE
PROTEUS	Gram negative rod	Characteristic spreading or swarming, smells like feces or burned gun powder
PSEUDOMONAS	Gram negative rod	Dark green-brown center Blue-green pigment Fruity odor — clover
KLEBSIELLA AEROBACTER	Gram negative rod	Large moist shiny, mucoid Confluent, strings up
STREPT FECALIS	Gram positive cocci	Gram positive cocci on E.M.B.

NOTE: The above also grow on Blood Agar.

The Gram Stain

The determination of the reaction to the Gram stain requires good judgment. In a properly stained smear, Gram-negative organisms will always stain red. Gram-positive bacteria, however, may fail to retain the purple dye, and, staining red, appear incorrectly Gram-negative. Factors influencing such decolorization are the age of the culture, lowering of the pH of the medium, and the presence of toxic substances. It is not unusual in an eighteen-hour culture to find decolorized

---

*Obtainable from Arthur H. Thomas Company, Philadelphia 5, Pa.

Gram-positive organisms, even though the smears are correctly stained.

The two critical steps in the staining process are the action of the mordant (iodine solution) and the decolorizing process. If the iodine solution is not in contact with the cells long enough (at least one minute) the acetone and ether decolorizer will remove the gentian violet from the cells in which it should be retained. If too much acetone and ether are used, the same error will result. Practice will usually eliminate these technical errors.

Staining Procedures

1. Cover the fixed (flame) smears with gentian violet. Add 3-5 drops of sodium bicarbonate, distributing it throughout the stain on the slide. Allow the two reagents to remain on the slide for 30 to 60 seconds.
2. Wash well with water, removing all stain.
3. Cover the smears with iodine solution for at least 60 seconds.
4. Wash with water.
5. Decolorize by dropping the acetone and ether mixture over the smears until the decolorizer flows colorless from the slide. Care should be taken at this step of the procedure to avoid using too much decolorizing agent.
6. Quickly wash with water.
7. Cover the smears with safranine for 10 seconds to counterstain.
8. Wash with water.
9. Blot dry. Blotting paper should be used only once to avoid transferring organisms from one slide to another.

The Interested Doctor

The most important element in this system is the interested doctor. Technicians who are trained in bacteriology are difficult to find. When found, there is a relentless turnover due to biological factors, such as marriage and maternity. If the doctor will devote fifteen minutes a day to bacteriology, this will be sufficient. Because clinical judgment must be correlated with the bacteriology, the doctor must look at every plate. The doctor must check each Gram stain. His interest in bacteriology will also stimulate the technician to become more interested in the subject.

Sensitivity Studies

Sensitivity studies are usually not indicated in office bacteriology. Performed under the best conditions, these offer only a rough guide in the choice of therapy. A pure culture must be obtained. Secondary plates must be used, and variations of the individual disk must be taken into consideration. These variations depend upon solubility, diffusion, temperature, and freshness of the disk.

The proper identification of the individual organisms is all that is usually necessary in the selection of the appropriate antibiotic. Knowledge of the specific antibiotics is important.

Summary

The sequela of wide-spread antibiotic therapy has made office bacteriology desirable. A system based on two culture plates, the Gram stain, and an interested doctor is simple and accurate. The use of this system is not time-consuming, and after one acquires the experience, one will find it enjoyable. Clinical examination plus these simple procedures will lead to a proper diagnosis. Complicated culture media and biologic studies are not necessary in office bacteriology. If infections, such as Salmonella, Shigella, Brucella, Hemophilus, Pertussis, Clostridia, or Diphtheria are suspected, the material should be immediately sent to the State Board of Health or to a large diagnostic institution.

APPENDIX

GRAM — POSITIVE ORGANISMS

STAPHYLOCOCCUS

Gross: Large opaque colonies that produce pigment. Pathogens tend to be gold and yellow and are usually hemolytic.

Microscopic: Characteristic grouping of Gram-positive cocci in large irregular clusters.

STREPTOCOCCUS

Gross: Small translucent colonies, smaller in proportion to the size of hemolytic zone than those of the staphylococcus. The pneumococcus is inhibited by Optochin disk; the streptococcus is not.

Microscopic: The Beta hemolytic strept. are usually small and round, with adjacent slides slightly flattened, and their morphology is quite irregular. From the solid media, the organisms occur in pairs, very short chains, and groups closely resembling staphylococci. Long chains are seen in smears made from broth cultures but not from solid media. Many recommend the use of sheep blood agar for the identification of the Beta strept.

Alpha streptococci vary greatly in size and are usually elongated. They are often pleomorphic and may show bacillary and swollen forms. Changes occur from both liquid and solid media. Alpha steptococci are the most common organisms isolated from the throat.

BACILLI

Aerobic Gram-positive bacilli are contaminants.

PNEUMOCOCCI

Gross: Colonies are small and translucent. Pneumococci on human blood agar may be small and develop a greening similar to Alpha Strept. However, type III pneumococci are large and have a mucoid growth plus greening. Beginners sometimes confuse this greening mucoid growth with pseudomonas when observed only on blood agar.

Microscopic: These are small, lancet-shaped and occur in pairs. They decolorize easily and so are both Gram-positive and Gram-negative on the smear. This organism is inhibited by the Optochin disk and is soluble in bile.

DIPHTHEROIDS

Gross: Variable.

Microscopic: Short thick pleomorphic Gram-positive bacilli occurring in palisades and Chinese-letter formation.

NOTE: The identification of pathogenic diphtheria is very difficult. If this disease is suspected clinically, the culture should immediately be sent to the State.

MONILIA

Gross: Large moist yeast-like colonies.

Microscopic: Budding fungi.

GRAM — NEGATIVE ORGANISMS

E. COLI

Gross: These are large, shiny, gray, and possibly hemolytic. On an E.M.B. plate, they usually have the characteristic metallic sheen. These are uncommon in throats. Some species of E. Coli and aerobacter are so similar on E.M.B. that further study is necessary.

Microscopic: Gram-negative bacilli.

KLEBSIELLA-AEROBACTER

Gross: Aerobacter on E.M.B. appears slightly mucoid and has a deep violet center with a pink outer area. Without biochemical reactions, paracolobactrum and Serratia may be mistaken for aerobacter.

Klebsiella-Aerobacter appears moist and marked by mucoid with a violet center. This strings up.

Microscopic: Encapsulated Gram-negative rod.

PROTEUS

Gross: Characteristic spreading colony that smells like burned gunpowder or feces.

Microscopic: Gram-negative rod.

PSEUDOMONAS

Gross: Irregular colonies with dark brown-green centers. There is a characteristic blue-green pigment, especially when cultured at room temperature. This is the organism that has a fruity or clover-like odor.

PARACOLON

If the organism does not fit into the above classification, it is probably a paracolon.

NOTE: Salmonella and Shigella closely resemble paracolon.

NEISSERIA

Gross: Wide variation may be large, off-white or gray. May be hemolytic or nonhemolytic. Many are wrinkled. Some produce yellow pigment. This is a very common organism found in the throat.

Microscopic: Gram-negative diplococci.

HEMOPHILUS

Gross: Small dew drops (inhibited by human or sheep blood) should be cultured on rabbit blood with nutrients added. Chocolate blood agar is the media of choice for hemophilus.

NOTE: This is the pathogen in less than 1% of throat infections.

Microscopic: Pleomorphic Gram-negative rods.

ALKALIGENES FAECALIS:

Gross: Colorless colonies. Ferments no carbohydrates.

Microscopic: Gram-negative rod.

Supplies for Office Bacteriology

1. Sterile throat swabs.
2. Wire loop for streaking.
   Wire loop for quantitative urine culture.
3. Plates (disposable)—E.M.B. & Blood Agar.
4. Alcohol lamp.
5. Incubator.
6. Glass slides.
7. Gram stain.
8. Microscope.
9. Refrigerator.
10. Interested physician.

Gram Stain Reagents

There are many modifications of the Gram stain. The one to be described here, a slight modification of Burke's method (J. Bact. 7:159, 1922), has been found to be reliable even in the hands of the most inexperienced.

REAGENTS

Gentian-violet or crystal violet	1% aqueous solution
Sodium bicarbonate	5% aqueous solution containing 1/20,000 Merthiolate*
Gram's Iodine**	
Potassium iodine	2 Gm.
Iodine	1 Gm.
Water	200 Ml.
Decolorizing Agent	
Acetone	300 Ml.
Ether	100 Ml.
Counterstain	
Safranine	0.5% aqueous solution

*Merthiolate is added to the sodium bicarbonate to prevent growth of contaminating bacteria and fungi in the solution.

**Gram's iodine should be stored in a brown glass bottle to prevent deterioration.

Practical Text Book: "Diagnostic Bacteriology" Schaub, Foley Scott and Bailey (C. V. Mosby Company).

The Use of Immune Lymph in the Treatment of Mouse Cancer*

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Immunity is becoming increasingly important in the field of cancer and organ transplantation. All physicians should increase their knowledge in this area as more modern concepts unfold. This thoughtful and careful study will help you understand the importance of lymphocytes in these phenomena. The illustrations show the specific differences between the use of lymph and the use of serum from immunized animals.

Research on the rejection of tissue transplants has been directed into two opposite efforts. The first is to abort or block the rejection process to permit successful homo-transplantation. The second is to utilize and possibly intensify this rejection mechanism to destroy a specific tumor. In regard to the latter, previous endeavors have been devoted to the formation of a cancer antiserum. This paper is a report of experimental work done to determine whether an animal can be immunized against a specific tumor, and whether the rejection factor can be transferred in a vehicle other than serum and directed against that specific cancer.

This research originated with the thought that the rejecting factor might be recovered from cells, particularly those of the reticuloendothelial system. The concept was formulated around three generally accepted opinions.

1. The rejection of cancerous tissue-transplants has been considered an immune response. Antibodies are formed against antigens contained within the tumor cells; but how specific these cancer-cell antigens are is yet unknown.

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*Abridgment of thesis submitted by Dr. Balme to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of requirements for the degree of Master of Science in Plastic Surgery.

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2. These antibodies seem to be made in the cells of the reticuloendothelial system — probably in plasma cells and lymphocytes — and at least in part are transported by such cells. This mechanism, so far as is known, differs from the transport of bacterial antibodies, which is affected by some fraction of the serum proteins.

3. Passive immunity in some instances can be transferred from one animal to another by lymphocytes.

A series of experiments was conducted in order to determine whether an animal could be immunized against a specific cancer, and whether a transferable rejection factor might be recovered from reticuloendothelial cells and used to inhibit or destroy the original cancer.

Preliminary Experiments

A large colony of male C 57/BL/6 Jax mice, several of which bore BW 8131b rhabdomyosarcoma with no cross striations, were obtained from the Roscoe B. Jackson Memorial Laboratory. By injecting a suspension of tissue from the tumor subcutaneously into the flank of hitherto cancer-free mice from this inbred colony, groups of mice with transplanted rhabdomyosarcoma were maintained without apparent change in characteristics of the tumor for more than 1 year.

The technique used was one we found nearly always successful in respect to growth and survival of the tumor. A mass became palpable at the site of injection in about 4 days, and the mice succumbed in 4 to 5 weeks.

Materials and Methods

New Zealand white rabbits and random-bred rats of the Sprague-Dawley strain were given injections of 0.3 to 0.5 gm. of minced rhabdomyosarcoma weekly for several weeks in an effort to immunize the animals against the tumor cells. Freund's adjuvant also was used for the suspension of the cells in some instances in an attempt to increase antibody production. In some animals subcutaneous and intraperitoneal injections of tumor emulsion were alternated.

After rats and rabbits were thought to be immunized against the mouse rhabdomyosarcoma, lymph nodes, spleen, liver, and bone marrow were carefully dissected and teased away from the animals. Emulsions of these materials were injected subcutaneously into groups of mice bearing rhabdomyosarcoma.

No change was measurable in the rate of growth, consistency, or microscopic appearance of the tumors, or in the length of survival of the treated mice, except that bone marrow occasionally caused sloughs at the point of injection, with consequent death.

Extension of Experiments.

These experiments were about to be abandoned when an observation from a completely unrelated project was noted: namely, that the lymphatic mesenteric duct of rats and rabbits could be cannulated and large amounts of lymph collected.

In the hope of obtaining lymph, with its known high content of lymphocytes and other endothelial elements, intubation of the main mesenteric lymphatic trunk of rabbits and rats, previously subjected to our unsatisfying immunization against rhabdomyosarcoma, was done* by the method of Bollman, Cain, and Grindlay.[1] The lymph was collected and cooled in siliconized glassware. In a 24-hour period, each rat yielded from 20 to 100 ml. of lymph, with counts of lymphocytes ranging from 30,000 to 200,000 per cubic millimeter; and each rabbit yielded from 30 to 100 ml. of lymph, with lymphocytes ranging from 20,000 to 150,000. The longer these animals were allowed to drain, the lower their lymphocyte counts fell within the ranges stated. Cultures of this lymph were sterile, and lymph was used within an hour of the time of collection.

The mice bearing rhabdomyosarcoma were kept four per cage, and their weights and the size of their tumors were recorded daily. Each group of four contained both experimental animals and controls. When 1 ml. of lymph (we may describe as immune to rhabdomyosarcoma, collected from either rabbits or rats) was injected subcutaneously into the experimental mice on the side opposite the tumor for 3 consecutive days, the tumors of these mice became smaller, flatter, and harder than those of the controls. Since only immune lymph seemed to cause definite regression of the tumor, further extensive experiments were done.

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*These animals were catheterized by our technical assistant, Emery Van Hook.

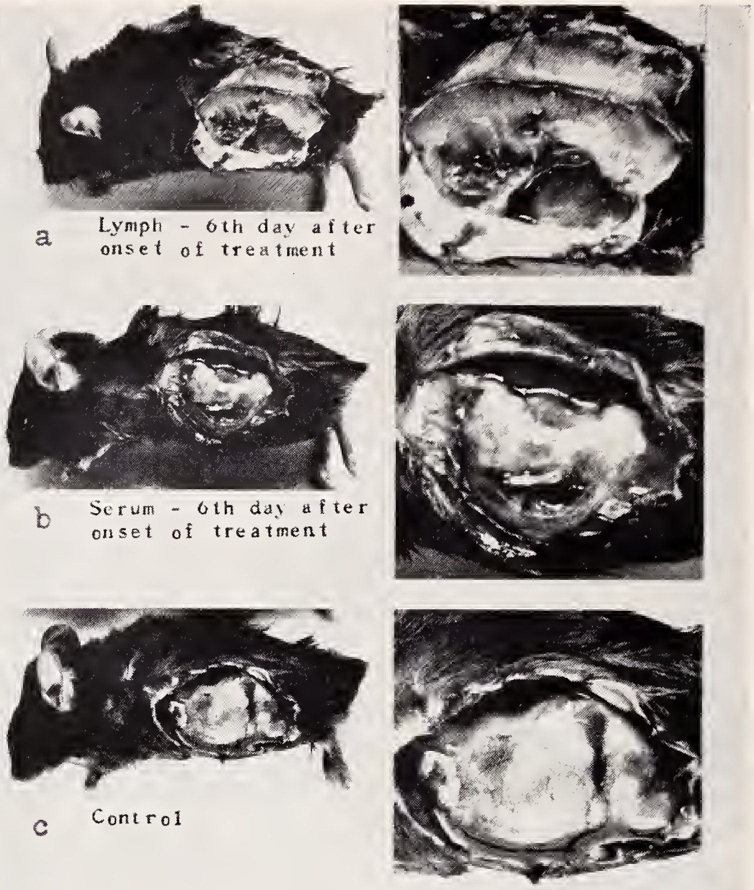
a
Lymph - 6th day after onset of treatment
b
Serum - 6th day after onset of treatment
c
Control

Fig. 1. Tumors 6 days after beginning of treatment. Note in *a* that the tumor in animal treated with immunized-rabbit lymph has become merely a necrotic cord as compared to plump, firm tumors of animal treated with immunized-rabbit serum, *b*, and control animal, *c*.

Results of Using Immunized Lymph

Related Findings of Others

In reviewing the literature, we found many fragments of information to support the possibility that transfer of lymphocytes from animals immunized against a specific tumor could also transfer a rejecting mechanism against that tumor. To cite a few of these, Tore Wesslen[2] took thoracic-duct lymph from tuberculous animals and transferred it intracutaneously to negative recipients. The latter became tuberculin-positive at the site treated. Cell-free lymph from the tuberculous animals did not induce hypersensitivity when injected into tuberculin-negative guinea pigs. After homologous immune lymphocytes were injected intraperitoneally into tuberculin-negative guinea pigs, shock was produced by the injection of tuberculin.

Mitchison[3] showed that cells from a lymph node draining the region of a tumor homograft, when transferred as mince into the peritoneum of a suitable secondary host, would confer immunity against a positive take. Serum and whole blood used as controls failed to transfer such immunity.

Spencer[4] concluded that the lymphocyte had a function in tumor immunity, as suggested by the fact that a large number of these cells gather around any tissue capable of eliciting immunity. Dead tissue, however, excites no lymphocytic response.

Harris and associates[5] injected typhoid antigen or sheep erythrocytes into the pad of a rabbit's hind foot, and collected lymph from the efferent lymphatic or the popliteal node to analyze

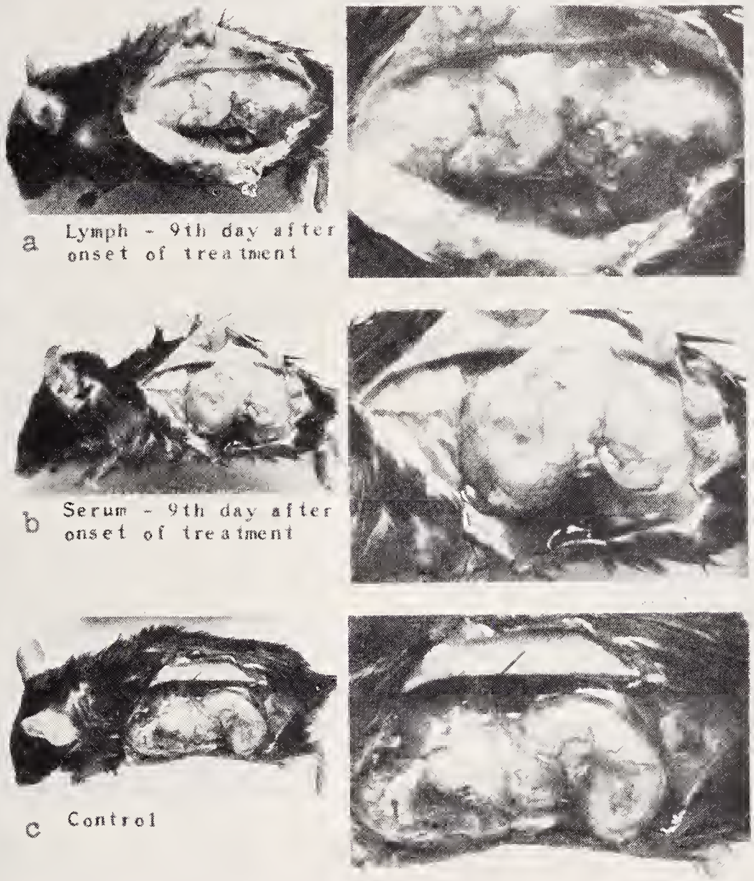
a Lymph - 9th day after onset of treatment
b Serum - 9th day after onset of treatment
c Control

Fig. 2 Tumors 9 days after beginning of treatment. Note in *a* white fibrotic regions of tumor in animal treated with immunized-rabbit lymph as compared to the large vascularized tumors seen in *b* and *c*. Note also how large and healthy the animal in *a* appears as compared to animals in *b* and *c*.

for antibody content. Upon separating the lymphocytes from the plasma lymph, they found that the antibody titer of the cell extract was substantially and consistently higher than that of the surrounding cell-free fluid. They further demonstrated that antibodies passed from the cells to the surrounding fluid and concluded that lymphocytes per se were instrumental in the formation of antibodies.

Prehn, Weaver, and Algire,[6] using diffusion chambers of relatively great porosities (including permeability to diptheria antitoxin), showed that it is possible to maintain the nutritional integrity of tumor cells. They found that under such circumstances homologous tumor cells do not induce the formation of antibodies but grow even in immunized recipients. Their data support the hypothesis that both antigen and the mobile resistance factor in some types of homograft immunity exist to a critical extent in ultimate association with cells rather than in a free or humoral state. They cited the possibility that strong antigens call forth a great production of specific antibody, of which large amounts are liberated from the lymphocytic factories in direct contact with the lymphocytic cells and are detected as humoral antibodies. Weaker antigen may possess only limited capacity for production of antibody, and may cause little or none to be liberated. Effective concentration often can be achieved only in the immediate vicinity of or even in direct contact with the lymphocytes. The investigators thought this might offer some explanation of the differing degrees of success in demonstrating tumor antibodies in serum.

Berenbaum[7] showed that intracellular locali-

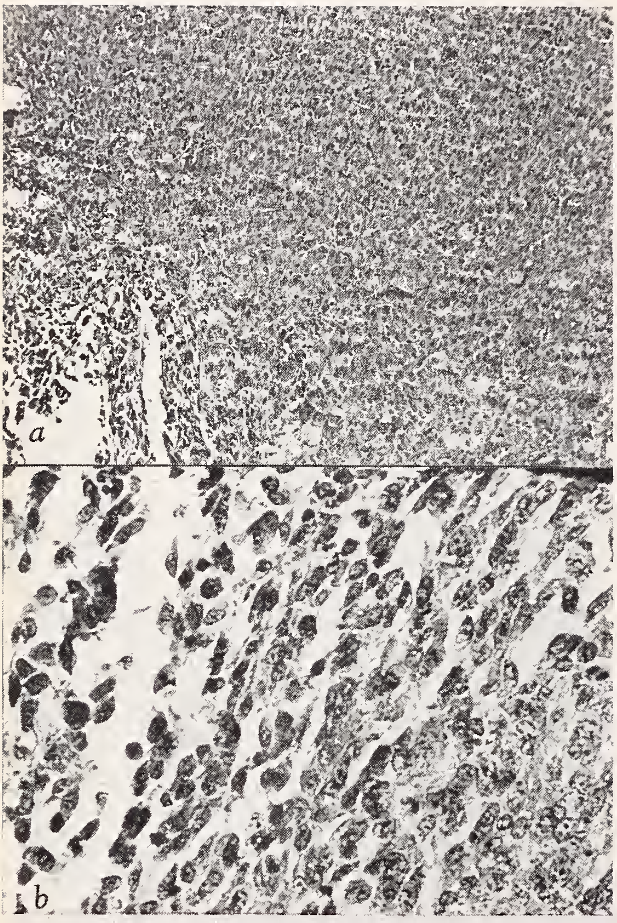

Fig. 3. *a*. Rhabdomyosarcoma from control mouse in fig. 1 *c*. Note extreme cellularity and frequent lack of architectural design. (Hematoxylin and eosin; reduced from x100.)

b. Detail of same. Note plump spindle character of cells, some of which exhibit racquet forms. Cytoplasm is plentiful, somewhat dark-staining, and finely granular. Nuclei are large and oval with very prominent nucleoli which are amphophilic. Mitotic figures are numerous. (Hematoxylin and eosin; reduced from x400.)

zation of antibodies may be demonstrated by treating imprints of lymph nodes from immune animals with a solution of radio-iodinated homologous antigen. The antibody content appeared to increase with cell maturation. The antibodies were present in plasma cells within the lymph node.

Findings in This Study.

Our experiments demonstrated that mesenteric lymph collected from either rats or rabbits previously immunized against rhabdomyosarcoma caused some degree of regression of tumor in each of more than 100 mice treated. The degree of regression varied with the amount of lymph employed, duration of treatment, and the route of injection.

In groups of mice given relatively large dosages of immune lymph (1 to 2 ml. daily for several days) subcutaneously on the side opposite their growths, tumors previously measuring 2 by 2 cm. showed a marked change after the fifth day of treatment. They were markedly harder and flatter, and their borders were difficult to delineate by palpation. The survival period in these groups was several times that of control tumor-bearing mice. In some instances small nodular growths were observed in the original tumor site, which we considered new developments from a few scattered undestroyed tumor cells. In others no recurrence of tumor was observed. In those mice in which the tumor did not recur, the mass where the tumor emulsion had been injected regressed to a hard, flat structure that remained unchanged thereafter. These mice continued to live for many months with a growth pattern and a survival rate identical to those of control mice without tumors.

Small doses of immunized lymph — as little as 0.2 ml. — given daily for more than 14 days caused initial regression of tumor, which was followed by renewed growth. This phenomenon may represent an ability of the tumor-bearing mice to form antibodies against the rat or rabbit lymphocytes. One may speculate that changing the animal source of immunized lymphocytes at weekly intervals might circumvent such a process.

On the other hand, when *large tumors* (more than 3 by 3 cm.) were treated with *large doses* of immune lymph (2 ml. daily), the tumors underwent an immediate and marked regression. Some of the tumor-bearing animals in this situation died following the regression, and at necropsy their entire tumors were found to be necrotic. Rapid necrosis of large tumors may have caused toxic products to be released, with consequent death of these animals.

Pathologic Features.

At the sixth day of treatment the gross appearance of the tumors was essentially that of yellow-reddish debris, no part of which resembled the viable rhabdomyosarcoma of control mice

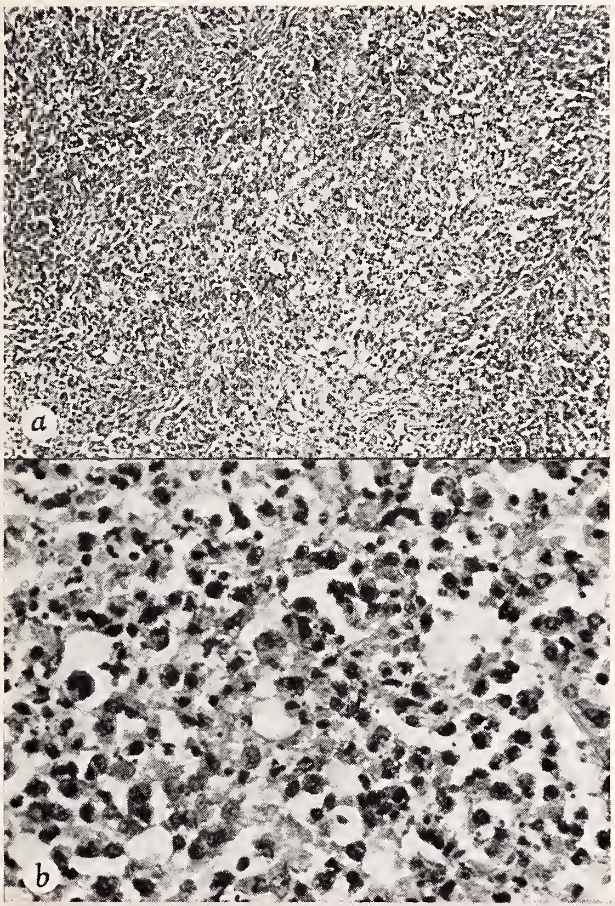

Fig. 4. *a*. Rhabdomyosarcoma from mouse 4 days after beginning of treatment with immunized-rabbit lymph. Note cribriform zones of tumor lysis in center, alternating with zones of less affected tumor at lower right. (Hematoxylin and eosin; reduced from x100.)

b. Detail of upper central portion of same. Note edema with swelling and ballooning of tumor cells. Nuclei are pyknotic and chromatin is clumped. Some giant forms are apparent. Viability is questionable because of absence of mitosis. (Hematoxylin and eosin; reduced from x400.)

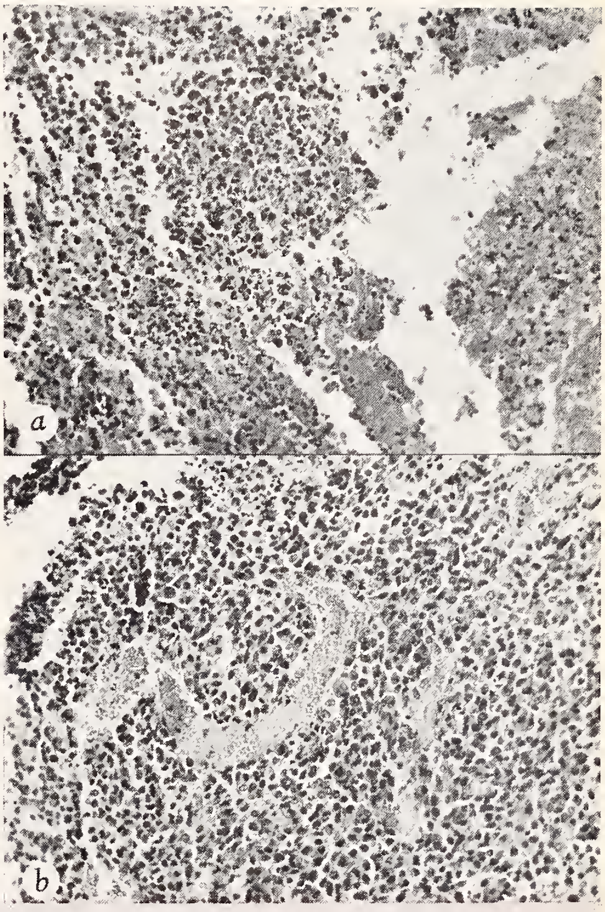

Fig 5. *a*. Rhabdomyosarcoma from mouse in fig. 1*a*, 6 days after beginning treatment with immunized-rabbit lymph. Note wide zones of hyaline coagulative necrosis containing bits of broken-down nuclear debris. (Hematoxylin and eosin; reduced from x200.)

b. Another section from same tumor, showing mixture of viable and necrotic tumor cells, and pronounced increase in vascularity. Vessels are thin-walled, much dilated, and filled with a proteinaceous coagulum containing degenerating red blood cells and possibly tumor cells. (Hematoxylin and eosin; reduced from x200.)

(fig. 1). Gross specimens taken after longer treatment revealed the periphery of their tumors to be white, glistening, and fibrotic (fig. 2).

Microscopically, early changes appeared as increased vascularity, edema, swelling of tumor cells, loss of spindle shape, nuclear pyknosis, clumping of chromatin, and most strikingly, an almost complete lack of mitotic figures (fig. 3, 4, and 5). Coagulation necrosis — often massive — followed shortly.

In sections taken after longer periods of treatment, marked fibroblastic encasement with central calcification of the necrotic tumor was observed (fig. 6). In some instances small islands of viable tumor were seen within regions of necrosis. These islands were thought to represent recurrences. In tumors from other treated mice which seemed clinically to be cured, no such zones of viable tumor could be found microscopically.

A very striking microscopic similarity existed between sections of tumor recovered from rats previously given transplants of mouse rhabdomyosarcoma and sections of tumor taken from mice treated with immune lymph. The transplanted tumor recovered from rats had been re-

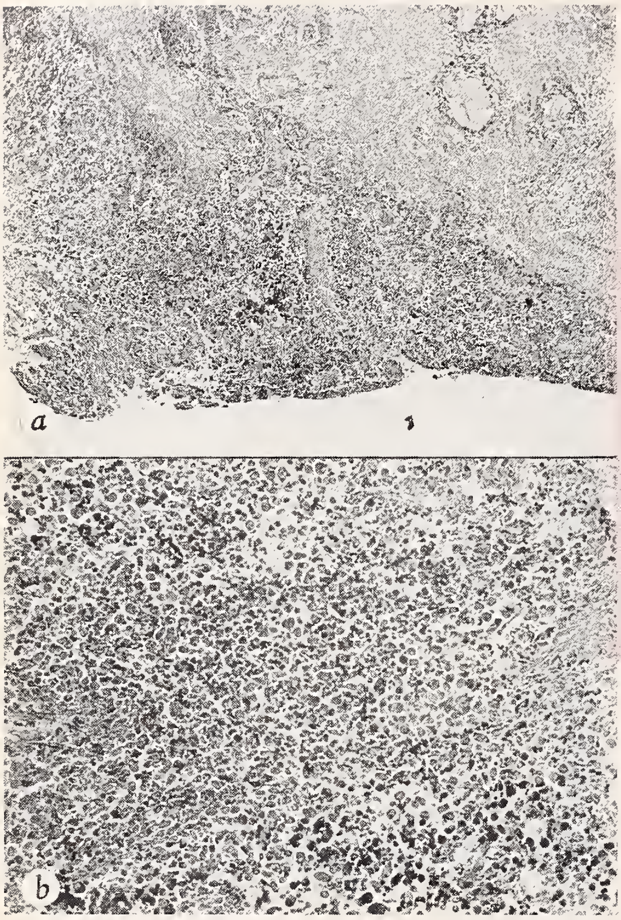

Fig. 6. Rhabdomyosarcoma from mouse 28 days after beginning of treatment with immunized-rabbit lymph. *a*. Note that entire section is necrotic and contains areas of calcification. (Hematoxylin and eosin; reduced from x50.)

b. Another section of same tumor; magnification reduced from x200. Note calcification in lower border, and loss of cell outline with fragmentation. (Hematoxylin and eosin.)

jected by an immune mechanism, and the similarity in microscopic appearance suggests that this same mechanism may have existed in the treated tumor-bearing mice (fig. 7 and 8).

Controls.

Realizing that anything toxic to a tumor-bearing mouse could in itself cause changes in the tumor, we injected immune lymph into non-tumor-bearing mice. We were unable to see any change in growth or gain of weight to suggest that this lymph was toxic to them. This fact, coupled with the finding that lymph from rabbits *not previously immunized* against rhabdomyosarcoma would not cause tumor regression, suggested to us that our positive results were not due to toxic properties of lymph.

When rabbits received injection of normal mouse muscle and were immunized just as were those that received rhabdomyosarcomatous tissue, lymph from them did not cause tumor regression. This could indicate that the regression associated with antitumor lymph was due to a specific antitumor factor rather than to an anti-mouse factor.

We found that serum taken from tumor-immunized rabbits did not cause any changes in tumors of mice so treated.

In more than 500 tumor-bearing mice which were not treated, no instance of spontaneous regression was observed.

Summary

Experimental results have demonstrated that an animal such as a rabbit can be immunized against a specific cancer from a mouse, and that this immunity can be transferred passively in mesenteric lymph to another mouse of the same

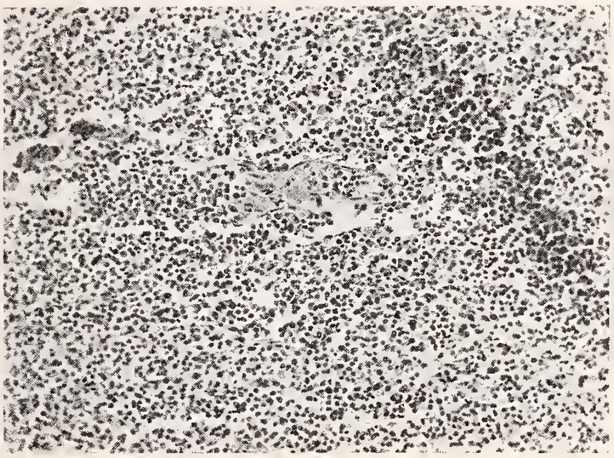

Fig. 7. Rhabdomyosarcoma from rat 20 days after implantation from mouse host. Note numerous polymorphonuclear leukocytes interspersed with disintegrating tumor cells, none of which appears viable. (Hematoxylin and eosin; reduced from x200.)

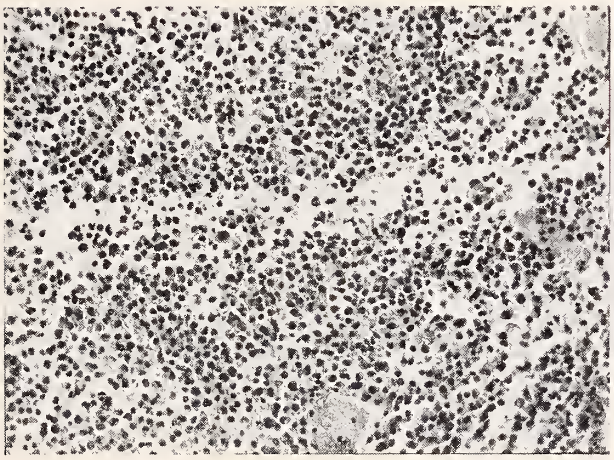

Fig. 8. Rhabdomyosarcoma from mouse 6 days after beginning of treatment with immunized-rabbit lymph. Note similarity of this section, showing cell pyknosis and increased vascularity, to that in fig. 7, which shows rejection type of response in rat. (Hematoxylin and eosin; reduced from x200.)

inbred strain and directed against the transplanted mouse cancer. The marked regression which occurred in rhabdomyosarcoma in mice when they received injections of mesenteric lymph collected from rabbits or rats previously immunized against this tumor suggests that an anticancer lymphocyte can be formed against a specific cancer and effectively transferred.

Our results failed to indicate that any similar anticancer factor could be transferred in serum.

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"Slang is language that takes off its coat, spits on its hands, and goes to work."
—Carl Sandburg

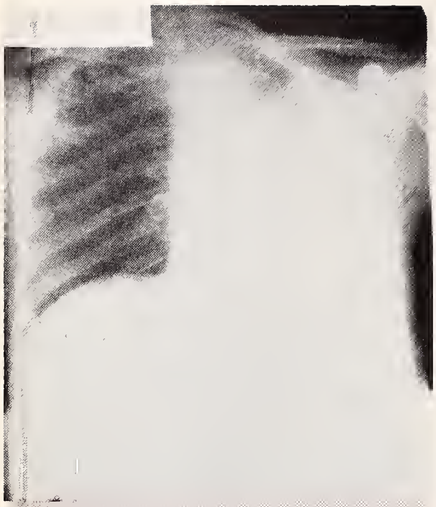

Figure 1. Chest roentgenogram illustrating massive atelectasis on left in a postoperative patient.

Pulmonary complications still plague the surgeon. In spite of improved anesthesia and antibiotic therapy we must continually focus attention on the problem of pulmonary health in the postoperative period. The authors present a new concept in the postoperative care of patients. The physiologic rationale of this method is demonstrated with animal experimental studies.

TRACHEOBRONCHIAL LAVAGE in Treatment

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RESPIRATORY COMPLICATIONS are important causes of morbidity and mortality in patients who have had surgical operations. Atelectasis and aspiration of saliva or gastric contents constitute two particularly ominous respiratory complications seen frequently in patients after general anesthesia or in victims of trauma. It is the purpose here to describe the use of tracheobronchial lavage, a new treatment for pulmonary atelectasis and aspiration, and to evaluate the effect of this treatment on pulmonary airway resistance and lung compliance in the dog.

Large amounts of saline or water can be instilled into the tracheobronchial tree of the experimental animal without ill effects.[1] The instillation of small quantities of saline into the

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*Presented at Minnesota Surgical Society Meeting, Minneapolis, Minnesota November 1961.

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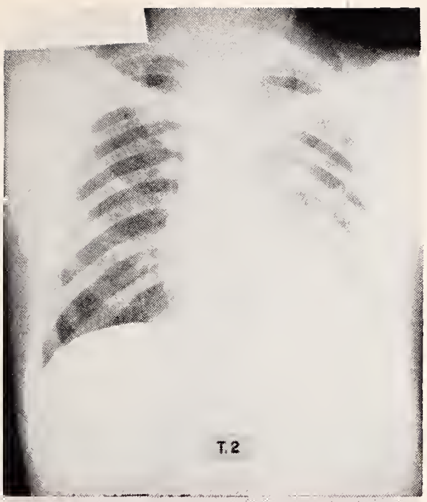

Figure 2. Repeat chest roentgenogram taken 20 minutes later after tracheobronchial lavage showing marked improvement.

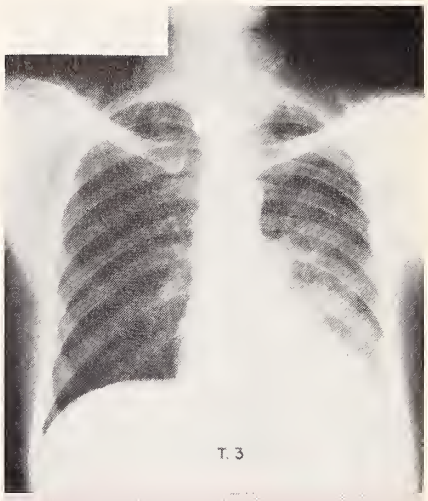

Figure 3. Chest roentgenogram 24 hours later illustrating normal appearance.

# of POSTOPERATIVE ATELECTASIS*

pulmonary tree as a lavage has been used for the treatment of aspiration of food and vomitus.[2] In 1958, one of us, (C. F. G.), cautiously began to use 50 to 200 ml. of saline as a lavage to treat patients with postoperative atelectasis. Since that time over 100 patients have been treated by lavage for atelectasis, for aspiration of stomach contents, or for accumulation of blood in the respiratory tree following trauma of the head, neck or thorax.

A brief case history will illustrate the dramatic benefit offered by the method.

Case Report

Mr. D. T., aged 39 years, was admitted to the hospital on September 9, 1960, following trauma to the left side of the chest and to the abdomen. A diagnosis of ruptured spleen was made and confirmed at operation, and a splenectomy was performed. Convalescence was complicated by massive atelectasis of the left lung. (Fig. 1) This was treated by tracheobronchial lavage using a total of 350 ml. of saline in 50 ml. portions. On suctioning, a large amount of thick mucoid material was returned with the saline. A chest roentgenogram performed 20 minutes after the lavage showed nearly complete resolution of the atelectasis. (Fig. 2) The following day there was further clearing of the lung field as shown in another roentgenogram. (Fig. 3)

In order to evaluate the effects and possible hazards of tracheobronchial lavage, airway resistance and lung compliance were measured in five dogs after tracheobronchial lavage with saline. A saliva-mucin mixture was installed into the tracheobronchial tree of ten dogs. Five of the latter group were treated with lavage.

Material and Methods

Healthy, adult dogs were anesthetized with pentobarbital, 30mg/Kg., and measurements of lower airway resistance and lung compliance were made in the manner described by Rossing.[3] An "Electronics for Medicine Research Recorder" was used to record simultaneously the pressure gradient between the lower trachea and the thoracic space, the airflow and the ventilatory volume. The pressure gradient was measured by a differential strain gauge.* It was assumed that variations in intraesophageal pressure with respiration were similar to the pressure changes in the intrapleural space.[4] Intraesophageal pressure was recorded, using a balloon-catheter system as recommended by Schilder et al.[5] Another catheter system† was used to record variations in pressure in the distal trachea. Air flow was measured, using a Lilly type pneumotachygraph[6] and a Statham transducer†† Volume of air was obtained by electrical integration of the flow signal from the pneumotachygraph. Dynamic lung compliance was calculated at zero air flow. Lung compliance (cc/cm. H_2O)=volume/pressure gradient. Lower airway resistance was calculated at peak flows during both inspiration and expiration. Lower airway resistance (cm. $H_2O/1/$ sec.) =pressure gradient/flow.

The Experiments

1. Saline Lavage Alone (five dogs)

Lower airway resistance and lung compliance were measured in the anesthetized normal animal. Twenty-two ml. of saline/Kg. body weight were then instilled as a lavage into the tracheobronchial tree. Suction was used to aspirate as much saline as possible during and immediately following this instillation. The amount of saline returned by suctioning was measured. Lower airway resistance and lung compliance were measured again at 15 minutes, 60 minutes, and 24 hours after saline lavage.

2. Effect of Lavage on Instilled Thick Secretions (10 dogs)

A mixture of donor dog saliva (2.2 ml./Kg. of body weight of recipient dog) and commercial mucin† (4.4 grams/Kg.) was instilled into the lower respiratory tree in 10 dogs. This mixture of saliva and mucin was so thick that it could not be suctioned through a No. 12 Fr catheter, using a negative pressure of 15 cm. of water. Lower airway resistance and lung compliance were measured immediately before and after instillation of this mixture in all dogs. Five dogs were not treated. Five dogs were treated with tracheobronchial lavage (saline-22 ml./Kg.). Lower airway resistance and lung compliance were measured in the treated dogs at one hour and 48 hours after instillation and lavage.

Results

Table I summarizes the effects of saline lavage on lower airway resistance and lung compliance in the normal dog. After saline lavage, there is a transient small increase in lower airway resistance. At one hour post lavage, lower airway resistance is near normal. There is a more persistent decrease in lung compliance in all dogs one hour after lavage and in three of five dogs 24 hours after lavage.

Tables II and III summarize the measurements of lower airway resistance and lung compliance following instillation of the saliva-mucin mixture. The untreated dogs (Table II) developed an increased airway resistance and all animals died of respiratory failure. In contrast, all five animals treated by tracheobronchial lavage with saline (Table III) survived. Airway resistance was greatly lowered by saline lavage even though it remained somewhat elevated at 48 hours after instillation of the saliva-mucin mixture. At 48 hours, the lung compliance was lower than normal but was rising.

Discussion

Tracheobronchial lavage has been effective in treating postoperative atelectasis and aspiration. Lavage is performed through a tracheostomy

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* Statham Differential Transducer, Model Pr 23-20-300.

† Clay-Adams PE #240.

†† Model Pm 97-05-350.

† Difco Co., Detroit, Michigan

TABLE I

LOWER AIRWAYS RESISTANCE AND LUNG COMPLIANCE AFTER SALINE LAVAGE OF THE LUNG

(22 ml./Kg. of body weight)

		LOWER AIRWAY RESISTANCE (Peak Exp. Flow-Cm. H_2O/l/sec.)				LUNG COMPLIANCE (Cc./Cm. H_2O)			
Dog #	(Wt. Kg.)	Normal	¼ HR*	1 HR*	24 HRs*	Normal	¼ HR*	1 HR*	24 HRs*
#85	(12.7)	1.88	8.21	1.62	1.38	14.30	5.61	7.36	11.4
#86	(11.4)	0.69	5.97	1.60	0.75	32.93	12.26	15.32	16.35
#91	(10.9)	0.69	8.28	2.38	0.98	32.20	9.80	9.97	15.33
#92	(13.2)	0.52	4.14	2.87	0.91	23.92	13.80	12.60	23.82
#93	(18.2)	0.03	0.48	......	0.55	32.16	12.26	....	16.35

* Time after lavage

TABLE II

LOWER AIRWAY RESISTANCE AND LUNG COMPLIANCE IN DOGS WITH SALIVA-MUCIN INSTILLATION. NO TREATMENT.

		LOWER AIRWAY RESISTANCE (Peak Exp. Flow-Cm. H_2O/l/sec.)		LUNG COMPLIANCE (Cc./Cm. H_2O)	
Dog #	(Wt. Kg.)	Normal	Post Mucin	Normal	Post Mucin
#88	(15.6)	1.01	Infinite resistance. No measurable flow.	28.90	No measurable volume.
#89	(11.8)	0.72	do	42.50	do
#90	(15.0)	0.97	do	32.20	do
#109	(13.6)	1.43	do	19.87	do
#117	(11.4)	2.38	39.80	29.26	1.59

or endotracheal tube. Saline is instilled in 50 ml. portions with suctioning of the tracheobronchial tree following each instillation. Positive pressure-assisted respiration with oxygen is given by either an anesthesia gas machine or a positive pressure respirator between each 50 ml. instillation, and also at the completion of lavage. This is an essential part of the technique of tracheobronchial lavage. Approximately 50% of the total amount of saline is suctioned back. The other 50% is rapidly absorbed by the lung.[7]

These studies show there is a transient increase in airway resistance and a more persistent decrease of lung compliance following tracheobronchial lavage with saline. Airway resistance is greatest fifteen minutes after lavage. The lower lung compliance in dogs indicates the need for assisted ventilation during and following lavage. It also shows the need for caution in applying this technique to patients with seriously lowered lung compliance. Preliminary studies indicate that assisted ventilation favorably influences the changes in airway resistance and lung compliance after saline lavage.

The experiments with the saliva-mucin mixture demonstrate that tracheobronchial lavage is a very effective method for removing retained, tenacious secretions, otherwise too thick to be suctioned. In dogs, following instillation of saliva-mucin mixture, lavage was successful in reducing markedly elevated airway resistance and preventing death from airway obstruction.

Summary

Lavage of the tracheobronchial tree with a total of 200-400 ml. of saline over a 5-10 minute

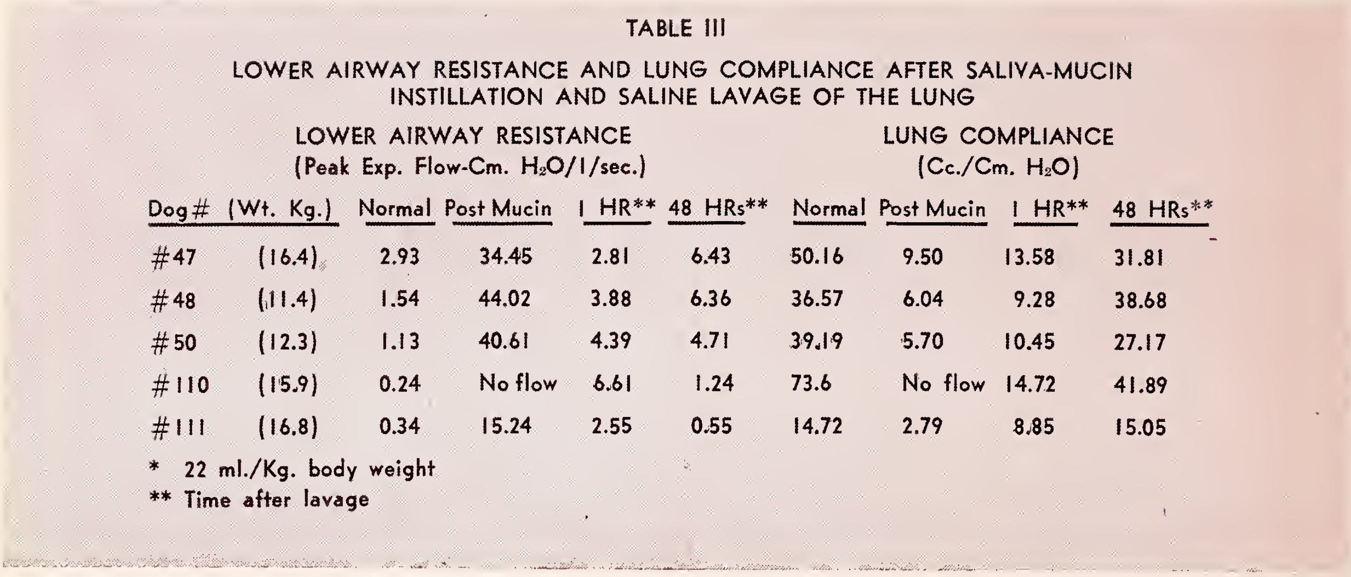

TABLE III

LOWER AIRWAY RESISTANCE AND LUNG COMPLIANCE AFTER SALIVA-MUCIN INSTILLATION AND SALINE LAVAGE OF THE LUNG

		LOWER AIRWAY RESISTANCE (Peak Exp. Flow-Cm. H_2O/l/sec.)				LUNG COMPLIANCE (Cc./Cm. H_2O)			
Dog#	(Wt. Kg.)	Normal	Post Mucin	1 HR**	48 HRs**	Normal	Post Mucin	1 HR**	48 HRs**
#47	(16.4)	2.93	34.45	2.81	6.43	50.16	9.50	13.58	31.81
#48	(11.4)	1.54	44.02	3.88	6.36	36.57	6.04	9.28	38.68
#50	(12.3)	1.13	40.61	4.39	4.71	39.19	5.70	10.45	27.17
#110	(15.9)	0.24	No flow	6.61	1.24	73.6	No flow	14.72	41.89
#111	(16.8)	0.34	15.24	2.55	0.55	14.72	2.79	8.85	15.05

* 22 ml./Kg. body weight

** Time after lavage

period has been effective in treating atelectasis and aspiration in over 100 patients. This treatment has been successful when routine measures, including frequent endotracheal suctioning, aerosols, tracheostomy, and bronchoscopy have failed.

In this study, the mechanical lung functions of lower airway resistance and lung compliance have been measured in the dog following tracheobronchial lavage with saline. Also thick secretions have been instilled into the respiratory tree of the dog and the animal then treated with tracheobronchial lavage. Lower airway resistance and lung compliance were measured after instillation and lavage.

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Fallout from Nuclear Weapons Testing

The Federal Radiation Council said that indications are that radiation received by the average American from nuclear testing is "considerably less than the exposure from natural sources."

The report said radiation doses from all nuclear tests through 1961 "have generally been a small fraction" of the amount received from natural radioactive sources such as radium in the earth's crust, cosmic radiation from space, and carbon-14 and potassium-40 in the human body.

Basing its estimates on measurements of radioactive particles in air, rain, soil, water supplies, food and human bodies, the Council said the dose from all atomic tests through 1961 was from one-tenth to one-quarter of the amount received from the natural background.

From the Washington Office
American Medical Association
Mailed July 5, 1962

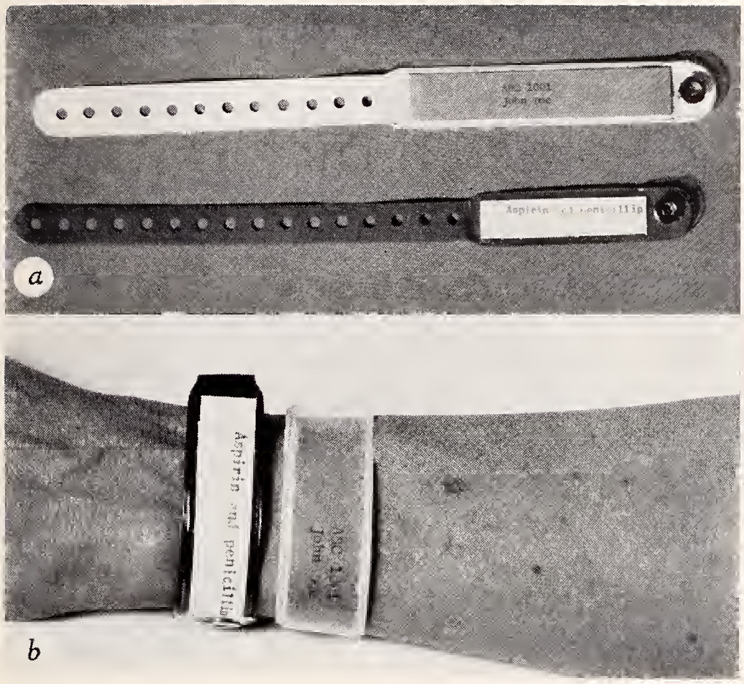

Figure a. Identification bracelet and bracelet to indicate drug allergy. b. Manner of placing bracelets on patient.

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Prevention and Management of Anaphylactic Reactions*

In allergic patients there occurs occasionally an interesting triad: asthma, nasal polyps, and aspirin sensitivity. Patients with this triad have a rather brittle type of asthma, resistant to treatment and given to complications. One such patient, encountered in the late 1920's, was hospitalized for intranasal polypectomy and an operation for sinusitis. It was believed that all personnel concerned with treating the patient had been made aware of his hypersensitivity to aspirin; nevertheless, when the patient complained of headache during the night a nurse gave him aspirin. This resulted in an immediate attack of status asthmaticus which persisted many days, during which the ultimate outcome was in doubt. This harrowing experience resulted in a greater attempt on our part to improve lines of communication to all Mayo Clinic and hospital personnel, warning them of drug allergy and its significance. Thereafter, whenever a patient gave a history of drug allergy, all of his clinic records and hospital records were stamped "drug allergy" as a warning not to administer to the patient the particular drug to which he was allergic.

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* Graduate Instruction Course at the meeting of the American College of Allergists, Minneapolis, Minnesota, April 2, 1962.

Another type of problem with similar implications was illustrated by a woman patient, the wife of a physician, whose response to treatment for her asthma was entirely unsatisfactory. Medications which should have provided adequate relief did not do so, and on some days she was alarmingly worse. Although we carefully reviewed all of her medications, we could not explain why she failed to respond to treatment. No history of any drug allergy could be elicited, but some detective work and observation revealed that the patient had her own supply of a headache remedy (Cibalgine) which she took whenever she had a headache. Flare-ups of her asthma definitely followed the use of this preparation, an observation that had entirely escaped the patient.

Warning Devices

Because of this experience and because about that time we increasingly encountered cases of allergy to sulfonamides and antibiotics, particularly penicillin, the clinic forms for patient histories were reprinted to include an area in which all drugs a patient was taking were to be recorded. A second area was designated for recording any known allergies a patient might have to drugs. When patients are referred from the clinic to either the medical or surgical departments of the hospitals, drug allergies are again indicated on the referral slips, in the hospital records, and on the sheet indicating drugs administered to each patient.

These measures have undoubtedly prevented many catastrophic reactions to drugs, but they fail when lines of communication break down, as is illustrated in the case of an asthmatic infant with marked sensitivity to milk. The records of this baby, who was getting along nicely in the hospital, indicated his allergy. There was even a sign in his room warning everyone not to give the patient milk. Nevertheless, when the baby's food tray arrived with some cereal but no milk, a nurse's aide thought the omission was an oversight and put milk on the cereal. She fed it to the baby with predictably serious results. This experience led us to arrange for the placing of a red plastic bracelet on each hospitalized patient with drug or food allergy as a warning to all hospital personnel that an allergy of some sort exists. In the "window" of the red plastic bracelet is typewritten the name of the drug to which the patient is sensitive. This red warning bracelet supplements the usual hospital identification bracelet with the patient's name and clinic number. Before a drug is administered or an anesthetic given, physicians, nurses, and others concerned are advised to check not only the identification tag but also the red warning bracelet (figure).

These mechanical devices are supplemented by repeated questioning by physicians, nurses, admitting officers, anesthetists, surgeons, investigators, and laboratory technicians as to a patient's possible allergy to or previous malexperience with the drug or dye about to be administered. Because we sincerely believe that prophylaxis in cases of drug allergy is more important than treatment, we think the history of previous sensitivity should never be challenged by giving the suspected agent to the patient. There is always a safer alternative, such as the administration of a completely unrelated antibiotic, anesthetic agent, sedative, or food, as the case may be. In instances of suspected hypersensitivity to some contrast media used to investigate kidney, gall bladder, or central nervous system disease, it is better to avoid the test and depend on the history and clinical findings for a diagnosis than to run the risk of inducing a severe drug reaction.

Anaphylactic Set

When we had difficulty in immediately assembling all the necessary material to treat a patient for severe status asthmaticus occurring after the use of topical anesthesia for bronchoscopy, we designed an "anaphylaxis set" containing the various emergency medications which might be necessary for the prompt treatment of any patient with an allergic reaction (table).

From time to time we have made changes in or additions to the contents of our anaphylactic set, and others adopting the set might want to make substitutions for specific items. Many other bronchodilators or antihistamines, for instance, could be substituted for those which we have in our set, and the same is true for steroids and drugs for the treatment of shock. We think our set contains the types of drugs which are most likely to be needed in case of a severe allergic reaction, but we have no special preference for the brands selected. It has been suggested that

TABLE

ANAPHYLAXIS SET

Materials	How Supplied
Medications:	
Epinephrine hydrochloride, 1:1000	Two 1-cc. ampules for ordinary hypodermic syringes or two 1-cc. Tubex ampules
Aminophylline, 7½ grains	Two ampules, 3¾ grains each, for intravenous use
Ephedrine sulfate, 25 mg. (⅜ grain)	One ampule suitable for subcutaneous, intramuscular, or intravenous use
Diphenhydramine hydrochloride solution: 10 mg. per cc.	Benadryl hydrochloride Steri-Vial, 10 cc., for intravenous use
Corticosteroid	Soluble prednisoline, 50 mq., for intravenous use or Soln-Cortef (hydrocortisone sodium succinate), 290 mg., for intravenous use
Penicillinase, 800,000 units	Neutrapen, single-dose vial, for intramuscular or intravenous use
Meteraminol bitartrate, 10 mg. per cc.	Aramine, 10-cc. vials, for intra-muscular subcutaneous or intravenous use
Levarterenol bitartrate, 0.2 per cent solution	Levophed bitartrate, two 4-cc ampules, for intravenous infusion
Dextrose, 5 per cent solution	1000 cc. for intravenous use
Water, sterile and triple distilled	Two 5-cc. ampules (for dissolving dry medications for injection)
Materials to facilitate injections:	
Hypodermic syringes	Two 1-cc. disposable syringes with needles and one Tubex syringe; one 20-cc. syringe
Hypodermic needles	Two with disposable syringes; one 1-inch needle for intramuscular injections; and one 4-inch needle for intracardiac injections
Administration set for intravenous solution	Type to fit enclosed bottle of dextrose solution
Tourniquet	Length of rubber tubing, 16 to 20 inches
Isopropyl alcohol sponges	Tubex—individual packets
Surgical supplies:	
Scalpel	One with attached blade
Hemostat	One, small
Suture material	Plain surgical catgut (00) with attached needle
Sterile gauze sponges	
Resuscitative devices:	
Plastic airways adaptable to mouth-to-mouth breathing	Resuscitube airways, adult and pediatric sizes

we also include antidotes for poisons in our anaphylaxis set, but we have not done this because of the nature of our practice as allergists and because a kit for the treatment of drug poisoning and similar emergencies has been assembled elsewhere in the clinic.

It is important to remember that not all emergency calls to treat drug reactions actually involve drug reactions. For example, recently a patient with severe hypertension became unconscious immediately after urographic media were injected intravenously. Various attempts at resuscitation, including mouth-to-mouth breathing, were unsuccessful. Necropsy indicated that the patient had died of a coronary occlusion and that drug allergy had not been a factor. However, the mechanical difficulties of holding up the tongue to keep the airway open while using mouth-to-mouth artificial respiration led to our adding airways to our anaphylaxis set.

Rarely is more than subcutaneous epinephrine required to relieve the average drug reaction. Nevertheless, one must be prepared to treat more serious reactions. Intravenously administered glucose solution containing aminophylline will be most helpful if status asthmaticus occurs and it becomes obvious that prolonged treatment is necessary. To this intravenous solution can be added an antihistamine or ephedrine solution if the situation warrants. Either Levophed or Aramine may be added if lowered blood pressure is obvious or if other evidence of shock appears. If a reaction is severe, prolonged, and not responsive to treatment, one could consider adding one of the intravenous steroid preparations to the glucose solution.

Each set contains a scalpel, hemostat, and suture material to provide for cutting down on a vein which is inaccessible to venipuncture because of collapse of the vein or excessive obesity, in which venipuncture is sometimes most difficult and frustrating. These also provide a means for accomplishing emergency tracheostomy in case of severe laryngeal edema.

Anaphylaxis sets are placed in such areas in the clinic as the allergy section, the ear, nose, and throat section, the pediatric section, the intravenous-urography section, and the area in the radiologic department where cholangiograms are carried out. At the hospitals, emergency rooms and hospital supply rooms adjacent to operating rooms contain sets. In the medical-science sections, the physiology department and the cardiac-catheterization areas have immediate access to sets. It is important for physicians working in these areas to be familiar with the contents of the sets and the use of the contained items.

Minutes count when one is confronted with a severe anaphylactic reaction, such as may follow the administration of drugs, serums, antigens, antibiotics, local anesthetics, dyes, and contrast media to which a patient is hypersensitive, or the sting of a wasp, yellow jacket, or bee to whose venom a patient is similarly hypersensitive. The anaphylactic reaction may take different forms, all of which are potentially serious, including choking, cyanosis, apnea, status asthmaticus, syncope, shock, convulsions, stupor, generalized urticaria, and angioneurotic edema. The patient may die.

The suddenness, unexpectedness, and severity of such reactions are very likely to find the physician unprepared to cope with the situation promptly and adequately. An anaphylaxis set containing appropriate emergency remedies should always be available.

A fanatic is a man who can't change his mind and won't change the subject.
—Author unknown

When a man is wrapped up in himself he makes a pretty small package.—John Ruskin

Disseminated Lupus Erythematosus and Pregnancy

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Although pregnancy complicated by systemic lupus erythematosus is rare, it is a combination of importance to all physicians handling maternity cases. During the pregnancy the lupus erythematosus may remit or exacerbate with about equal frequency. Usually an exacerbation of the disease occurs postpartum. Women with this disease have an unusually high incidence of abortions, stillbirths and premature liveborn deliveries.

In 1872, Kaposi recognized the disease we now know as lupus erythematosus, and called attention to its grave prognosis (34). Klemperer noted the widespread degeneration of collagen fibers and described the mucous nature of the extracellular ground substance (2).

Pathologically, the basic process in the disease seems to be an alteration in the connective tissue involving the fibroblasts and ground substance. The vascular lesions are prominent, showing capillary distention, endothelial proliferation and necrotizing vasculitis. Lesions in the vital organs include nonbacterial verrucous endocarditis described by Libman and Sacks, and a deformity of the kidney glomerulus described as a "wire-loop" capillary. By light microscopy the glomerular lesion of lupus erythematosus and toxemia of pregnancy are similar, but with electron microscopy, the LE deposits are denser and more compact (19).

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* Department of Obstetrics and Gynecology of the University of Minnesota Medical School. Presented at Minnesota Obstetrical and Gynecological Society Meeting at Rochester, Minnesota, April 28, 1962.

The etiology of the disease is unknown. It has been described in siblings (37) and also as a toxic manifestation of hydralizine therapy (12, 14, 30).

Clinical Types

The disease has been divided into four clinical forms:

1. Chronic localized discoid
2. Chronic disseminated discoid
3. Subacute disseminated
4. Acute disseminated.

The disease may go from one form to another, but generally the chronic forms are entirely cutaneous disorders, and the subacute and acute forms are systematic diseases (11). Clinically 80-95% of the cases of lupus erythematosus occur in women (16). Symptoms include: prolonged irregular fever, recurrent polyarthritis, lymphadenopathy, serous membrane involvement, acute abdominal pain, depression of bone marrow, weight loss, malaise, anorexia and skin rashes (20, 32). Menstrual disorders are common, especially amenorrhea (34).

Laboratory Findings

The laboratory work may show false positive flocculation and complement-fixation tests for syphilis (30). This false positive serology has been found in as many as 43% of the cases in the same series (34). Abnormal urinalysis, kidney function tests, electrocardiograms, and peripheral blood pictures are also common. A defective blood-clotting mechanism has been described (22).

In 1948, Hargraves of the Mayo Clinic and Haserick of Cleveland observed the LE cells in peripheral blood which could be used as a diagnostic aid (36). The LE cell is a leukocyte, usually polymorphonuclear in type, which contains a homogeneous reddish-purple staining inclusion body. The patient with the disease has an LE factor in her serum, found in the gamma globulin fraction but immunologically different from the normal gamma globulin. This factor seems to cause a chemical depolarization of desoxyribonucleic acid from the nuclear substance of white cells; this is then phagocytosized by neutrophils to produce the LE bodies in the LE cells. The phenomenon has been found to be present in approximately 90% of disseminated LE cases (5). Rarely have false positive tests occurred, as with miliary tuberculosis, hemolytic anemia, pernicious anemia and dermatitis herpitiformus (34). Since the LE factor is a gamma globulin, one would expect it to cross the placenta, and in 1954 Bridge and Foley reported positive LE cells in the cord blood. No antibodies could be demonstrated. In 1957 Berlyne, Shortand and Wickers reported two cases of LE cells in cord blood, but they could not be demonstrated in the baby after seven weeks of age. Several other cases have been reported (28, 31). It is not known whether the presence of the LE factor in the child is harmful, but these infants demonstrated no stigmata of the disease (30). Interestingly, however, McCuiston and Schoch reported a case of congenital disseminated L. E., and the mother developed acute disseminated L. E. 11 months postpartum (26). Hogg reported a case of congenital L. E. born to a mother with subacute L. E. (18). Recently a case was reported of congenital discoid L. E. born to a mother with rheumatoid arthritis (13).

Fertility Status and L. E.

When considering infertility, the American Society for the Study of Sterility states that a marriage is to be considered barren or infertile when pregnancy has not occurred after a year of coitus without contraception, and by this definition 19% of all marriages are so classified (7). One series of 188 cases of LE over a 23-year period showed that 101 patients had the disease during their reproductive life, and that 80 patients produced 181 pregnancies, or 2.3 births per patient, and that there was a sterility rate of 20.8% (16). Other studies report infertility rates of 19, 30 and 45% (24, 27, 36). Most authors feel that lupus erythematosus does not seem to interfere with fertility (21, 29).

With pregnancy, the clinical type of L. E. is important, and generally the chronic discoid form neither affects nor is affected much by pregnancy. The incidence of systemic L. E. associated with pregnancy has been variously reported. One series of 68,000 viable deliveries reported 29 patients delivering 42 babies, an incidence of 1 per 1660. In this series there were 60.5% term infants. Of the 29 viable births there were two deaths — one from cord complication and one from prematurity (16). The reports of the outcome of the pregnancies are derived mostly from small series. Murray reported three cases having a total of two live births in six pregnancies (30). Friedman reviewed 59 cases from 21 reports with varying conclusions: (a) 12 mothers became better when pregnant; (b) 7 mothers became worse; (c) 4 infants were jeopardized; and (d) 2 infants did well. Another series of 38 pregnancies in 22 women with a diagnosis of systemic L. E. resulted in 21 normal term babies, one premature living child, 10 abortions and 6 stillbirths (21, 29). There are a few cases reported where L. E. skin lesions disappeared during pregnancy but reappeared postpartum (2).

Occasionally L. E. may manifest itself first as toxemia of pregnancy (4). Among adult women a common cause of the nephrotic syndrome is systemic L. E. One patient is reported to have gone through an entirely normal pregnancy well after this diagnosis (29).

Prognosis

The cause of death in L. E. is usually lupus nephritis or congestive heart failure (28).

The prognosis for a pregnant woman with systemic lupus erythematosus is difficult to determine. Scattered reports in the literature show wide variation. For example, 66% mortality in one series was noted (23). A review of the literature shows that for subacute L. E. the maternal mortality is 0% and the fetal mortality 46%; for acute L. E. the maternal mortality is 20-60% and the fetal mortality 30-50% (36).

Therapy

The therapy for lupus erythematosus is corticosteroids. It is interesting that Hench's original work, which led to the discovery of cortisone, was based on a "factor X" which was present in pregnant women and which seemed to benefit their arthritis (11). During pregnancy the plasma levels of free hydrocortisone show a progressive rise throughout the course of pregnancy and reach a maximum at the end of the third trimester. After delivery they gradually fall until the prepregnancy level is reached at one week postpartum (6). This probably explains the remission of L. E. in pregnancy and the exacerbation postpartum. Adequate exogenous steroids can cause the symptoms to regress, but the renal damage and the L. E. cells persist (35). If the cortisone is given it may produce amenorrhea (8, 9). Fraser and others have given cortisone to experimental animals when pregnant and produced congenital defects. In the literature there are no reports of a human child damaged secondarily from exogenous corticosteroids (1, 15, 25, 27, 30). Stilbesterol has been used to treat some patients (33).

Case Reports

At the University of Minnesota Hospitals from 1952 to 1962 six patients with systemic L. E. were seen, followed, and delivered in nine pregnancies. All had positive L. E. clot tests, reversed A/G ratios, and negative serologies.

Case I:

L. B. a 23-year old white female had a spontaneous abortion in 1950. She became pregnant again in 1952 and during the first trimester she noted a butterfly rash on her face and a diagnosis of systemic L. E. was made. Cortisone therapy was started, but at 36 weeks gestation she delivered a 1250-gram stillborn child. The patient did well postpartum, continuing her cortisone medication. She became pregnant again in 1953. At approximately 16 weeks gestation she had an exacerbation of her L. E. and also albuminuria. At 36-weeks gestation she delivered a healthy 2490-gram infant who did well. The labor was complicated by hypertension. The cord blood gave a negative L. E. clot test. The patient again became pregnant in 1956; she continued on cortisone therapy but had persistent albuminuria. At approximately 31-weeks gestation she delivered a 1900-gram stillborn infant. The patient was followed in medicine clinic and expired in October 1960. The cause of death was a subphrenic infected hematoma secondary to a kidney biopsy. Examination of the kidneys showed typical renal lesions of L. E.

Case II:

M. D. a 33-year old white female, had the onset of her systemic L. E. at the age of 27 years with symptoms of arthralgia and facial rash. In 1954 she was seen in the obstetric clinic as a gravida 3, para 2002. She had had two normal full-term pregnancies prior to the onset of her L. E. She had a normal prenatal course without albuminuria and noted an improvement in her arthralgia during gestation. She was maintained on cortisone therapy and at 38-weeks gestation she delivered a 3160-gram normal infant who did well. She had an exacerbation of her arthralgia five weeks postpartum, but was well when last seen in 1958.

Case III:

P. M. a 23-year old white primigravida, was referred to University Hospitals in 1957 at about 10-weeks gestation with "nephritis." Her blood pressure was normal, BUN 11 mgm%, PSP 73% excreted in one hour, and a cholesterol of 175 mgm%. At about 26-weeks gestation she became hypertensive, had a two plus pitting edema to the knees, blurry vision, and albuminuria. The picture was a classic one for toxemia

Table 1
Significance of albuminuria during pregnancy

Maternal outcome	Number with albuminuria	Percent with albuminuria
Uncomplicated pregnancy	0/2	0
Exacerbation L.E.—lived	2/4	50
Exacerbation L.E.—died	3/3	100
Infant outcome	**Number with albuminuria**	**Percent with albuminuria**
Term living	1/3	33
Premature living	2/3	66
Stillborn	2/3	66

Table 2
Results of Pregnancies Complicated by Systemic Lupus Erythematosus at the University of Minnesota Hospitals 1952-1962

Number of cases	6	
Number of pregnancies	9	
Outcome:		
Maternal (6)		
Onset or exacerbation of L.E. in pregnancy	7	(77%)
Mothers now dead	3	(50%)
Fetal (9)		
Term liveborn	3	(33%)
Premature liveborn	3	(33%)
Stillborn	3	(33%)

of pregnancy. Cortisone therapy was begun, but on October 18 no fetal heart tones could be heard, and on October 24 she delivered a 585-gram stillborn infant. A kidney biopsy was obtained, which showed hyaline "wireloops" in the glomeruli. The patient became uremic and expired 10 weeks postpartum of lupus nephritis.

Case IV:

B. B. a 19-year old white female para 1001, had previously delivered a normal infant elsewhere in February, 1960. Two weeks postpartum she noted arthralgia, fatigue, and a butterfly facial rash, and a diagnosis of systemic L. E. was made. She again became pregnant with her last menstrual period in May, 1960 and was referred because of an exacerbation in her L. E. at about 36-weeks gestation. Clinically she had fever, lymphadenopathy, a facial rash and albuminuria. When Medrol therapy was started, her clinical condition improved. At term she delivered a 2220-gram normal infant, which showed negative L. E. clot tests. The patient developed uremia postpartum but is still living.

Case V:

C. K. a 20-year old white primigravida, had the onset of her systemic L. E. at the age of 16 years with symptoms or arthralgia and a butterfly facial rash. Her sister had died of systemic L. E. A kidney biopsy was done in 1957, showing characteristic "wireloop" glomerular lesions. She was treated with cortisone until she developed an active peptic ulcer and severe osteoporosis. She became pregnant in June 1960 and had persistent albuminuria. At 36-weeks gestation she delivered a 2680-gram normal infant. The cord blood gave a positive L. E. clot test; the baby was again tested at six weeks of age with a negative ressult. The patient had an exacerbation of her disease four weeks postpartum with uremia, facial rash, arthralgia and uterine bleeding. AD & C was done but no placental tissue was obtained. She was treated with cortisone and blood transfusions but expired eight weeks postpartum of uremia secondary to lupus nephritis.

Case VI:

R. S. a 21-year old primigravida, had the onset of her systemic L. E. at the age of 13 years, with arthralgia. A kidney biopsy showed the "wireloop" glomerular lesion. She was treated with Prednisolone and became pregnant in 1961. She had an unremarkable prenatal course. At 35-weeks gestation she delivered a 2100-gram normal infant whose cord blood had a negative L. E. clot test. With only an estimated 300 cc blood loss in the delivery room the patient went into profound shock, which was quickly corrected with the administration of intravenous cortisone. This probably represented insufficient adrenal response to stress. The patient has done well postpartum.

In conclusion, pregnancy complicated by systemic L. E. is rare. During the pregnancy the disease may remit or exacerbate with about equal frequency, but exacerbation is the rule postpartum, usually by eight weeks (16, 29). Fertility is not decreased, but the incidence of abortions, stillbirths, and premature liveborn deliveries is high (10). There is a greater than 50% chance of any one pregnancy going to term (29). Albuminuria is a poor prognostic sign, especially for the mother (see Table I) (30). Other laboratory data are of little prognostic value. There is no indication for therapeutic abortion in systemic L. E. (17).

In summary, in the 10-year period from 1952 to 1962, six women with systemic L. E. have been followed through nine pregnancies. In 7 (77%.) of these the L. E. either became manifest or exacerbated during or within six weeks postpartum. Three of the patients (50%) all of whom had lupus nephritis, are now dead. These nine pregnancies resulted in three term living babies, three premature living babies and three stillbirths (see Table 2). These results are in accord with the cases reported in the literature.

Addendum

An additional two patients with systemic L. E. are now being followed in pregnancy and are doing well.

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*References 13-37 can be obtained from the author and will be included in the reprints.

WHAT'S YOUR DIAGNOSIS

A fifty-five year old executive complained of right lower abdominal pain of three days duration. Initially it was associated with an urge to move his bowel, but normal daily bowel movements did not alter the pain. He had no nausea, dysuria, or fever, and his appetite remained normal. One month previously he had noted a similar episode of pain which had spontaneously subsided in two days. Except for an uneventful repair of a left inguinal hernia six months previously, he had been in good health.

Physical examination disclosed an afebrile man in no acute distress. There was tenderness and guarding in the right lower abdomen, but no abnormal masses were palpated. Bowel sounds were normal and there was no rebound tenderness. Rectal examination aggravated the pain, particularly on the right.

Admission chest x-ray, hemoglobin, and urinalysis disclosed no abnormality. The leucocyte count rose from 12,000 to 14,000 over-night, with a relatively normal differential. Exploration was carried out. A normal appearing appendix was found lateral to the hepatic flexure.

What is your diagnosis? See page 922.

The Difficult is that which can be done immediately; the Impossible that which takes a little longer.—George Santayana

A cynic is a man who knows the price of everything and the value of nothing.
—Oscar Wilde

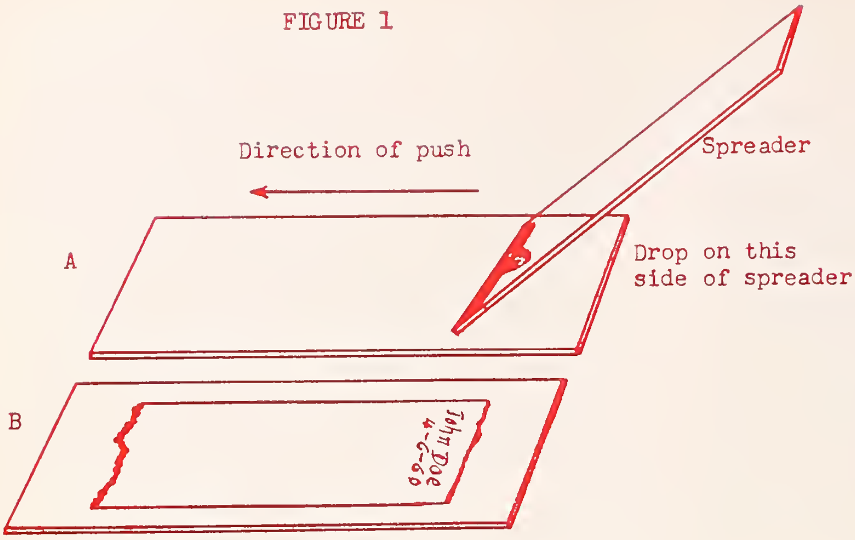

FIGURE 1

Technique for Determination of the Differential

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THE INTEGRATION of the differential and total leukocyte count with the clinical picture is the responsibility of the physician. Wintrobe[1] is of the opinion, however, that "in general, physicians are not sufficiently critical" of the errors in leukocyte counting "because the results are expressed numerically, and many derive a false sense of accuracy from them." Though the fact cannot be disregarded that many of those charged with the enumeration of leukocytes fail more often than the physician to correctly assess the significance of errors of chance inherent in sampling and counting methods. Miale[2] points out that the distribution of the leukocytes in a blood smear may vary from area to area, and a technical error of fifteen per cent or more is possible." An error of this magnitude is no trifling matter, since the percentiles are used for the determination of the absolute and relative value of a given leukocyte that is, whether a certain type is quantitatively increased, decreased, or unchanged. Thus, it is apparent that the errors of chance must be critically assessed, and the final differential leukocyte values must be accurate and duplicable. Further,

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Figure 2

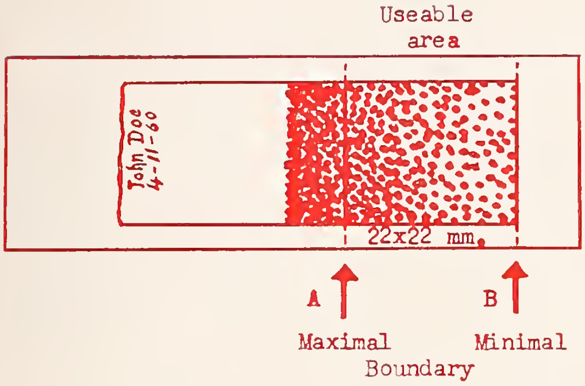
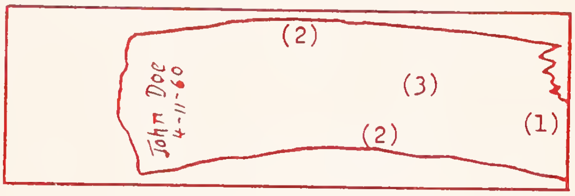


Figure 3



Leukocyte Ratio and Total Leukocyte Count

the increasing use of endocrine preparations, antibiotics, vitamins, and other drugs affecting the leuopoiesis makes the use of a standard method absolutely mandatory if the differential leukocyte values are to aid diagnosis, prognosis, or therapy. The technique for the approximation of the differential and total leukocyte count presented in this communication takes into account the statements cited above.

Many methods of differential leukocyte counting from a blood smear are recorded in the literature, but it serves no useful purpose to detail them here, because the numerical data is derived from either a too limited area or a haphazardly-selected area in a blood film. That a standard blood smear and counting area is essential for the approximation of the various leukocyte types is well demonstrated by the work of Goldner and Mann,[3] who concerned themselves with the "statistical error of the differential count." These investigators made twenty smears from one sample of normal blood and at random counted 200 leukocytes in each of the twenty blood films. They obtained a neutrophil percentage ranging from 38 to 51. This numerical difference reflects not only the irregular distribution of the leukocytes in a blood smear as demonstrated by Davidson[4] but also re-emphasizes the well known fact that an error of 10 to 15 per cent is common when the differential count is made exclusively with the oil immersion objective, and particularly when the fields are selected in a haphazard manner. Though the "confidence curves" of Goldner and Mann permit one to read off the "true per cent" value of a given leukocyte, Dacie[5] states that "the usefulness of the curves is limited because they can be applied only to a well-spread film." Availability of the latter is the exception rather than the rule in many laboratories.

The quantitative numerical value of a leukocyte is computed with the aid of total leukocyte count (WBC). Assume the white blood count is 20,000 per cubic millimeter with 20 per cent neutrophils. Though the latter numerical value suggests a severe neutropenia, conversion of the neutrophil percentage into cells per cubic millimeter yields 4000 neutrophils, which is well within the normal range of 3000 to 6000 per cubic millimeter.

While the surgeon is generally interested only in the total leukocyte count (WBC) and per cent of neutrophils, the internist must assess the entire leukogram, because an absolute or relative change of a leukocyte may have great significance in diagnosis, prognosis, or therapy. For example, the persistent absence of the plasma cell (plasmocyte) from the peripheral circulation may be indicative of hypo or agammaglobulinemia, whereas, according to Mitchell,[6] a sudden disappearance of the basophil may occur in the acute or early relapse stage of certain diseases. Code and associates[7] noted a decrease of the numerical value of the basophil and eosinophil on the administration of Cortisone. Thonnard-Neumann[8] confirmed this behavior phenomenon of these two leukocytes. This fragmentary citation of the literature pertaining to "minority leukocytes" and the increasing knowledge of the function and biochemistry of the blood leukocytes[9, 10] direct attention to the fact that counting just one hundred leukocytes is not justifiable, irrespective of the technique used.

During the past few years we have tested in our Hematology Section a differential leukocyte-counting method referred to in this communication as "differential leukocyte ratio (DLR) technique." We found not only that this method is accurate, but that the final differential leukocyte values are duplicable. The technique is a modification of the system of counting and recording the differential leukocytes devised by Schleicher.[11] The basic features of the method presented here are (a) use of a standard blood smear, (b) counting of the leukocytes in a standard area (useable area), (c) computation of the total leukocyte count (WBC) from the blood film, and (d) approximation of a "major leukocyte ratio" (MLR), which serve as guides for the enumeration of the various types of leukocytes, that is, "differential leucocyte ratio" (DLR). Detailed descriptions of these features are given elsewhere in this communication. It is sufficient to say that the blood smear is made from a standard drop of blood. The leukocyte values are determined in a 22x22 mm. "usable area," which is found with the aid of a rule employed for the approximation of the erythrocytes per cubic millimeter from a blood-film.[12]

Duplication of the numerical data is made possible by three considerations: (a) the useable area takes into account the chance distribution of the leukocytes in a blood film as noted by Davidson, (b) the final differential values are compatible with the "true per cent" values of Goldner and Mann and (c) the large number of leukocytes which were counted for the MLR makes the latter a "constant," meaning that the value of the major leukocyte ratio cannot be changed by the "minority leukocyte values," since these are approximated within the two major leukocyte groups, namely, the myeloid and lymphoid groups respectively. To illustrate the point just made: assuming the MLR is 4:1, that is, 80 myeloid to 20 lymphoid cells. Thus the myeloid group includes the stab form, neutrophil, eosinophil, basophil, monocyte, and immature forms of either cell type; whereas the lymphoid group includes the lymphocyte, plasma cell (plasmocyte), and the immature forms of either cell strain. Because under normal conditions the stab form, eosinophil, basophil, monocyte and plasma cell have a lesser numerical value than either the neutrophil or lymphocyte, these cells are referred to in this communication as "minority leukocytes," the values of which are subtracted from the respective major group. Decimal fractions are deleted. The final differential leukocyte values are expressed in whole numbers.

Thus, not only has the medical technologist a precise technique at hand, which allows duplication of the differential leukocyte values, but the physician may confidently accept and integrate the numerical data with the clinical picture. Here indeed is the crux of the "differential leukocyte ratio (DLR) technique" presented in this communication.

Preparation of Standard Blood Smears

The standard blood smear is made from a drop of freely-flowing finger blood, the size of the drop approximating the amount of blood contained in the stem from tip to the 0.5 mark of a dilution pipette for red cell counts. Pipetting of blood should be practiced until the quantity of blood needed for a standard smear can be approximated without the aid of a pipette.

The skin is incised with a sterile disposable blood lancet. The freely-exuding blood drop is picked up with a smooth-edged and chemically-clean "glass spreader" (pusher) 22 mm. in width. The drop is touched to a micro-slide near one end of the slide and the blood allowed to spread along the edge of the pusher while holding the latter at an angle of about 45° for normal blood, 15° for polycythemic blood, and 75° for blood of less than 2.0 million / c.mm. The spreader is rapidly moved toward the other end of the microslide in such a manner that the edges of the microslide are free of blood (Figure 1-A). The resulting smear is thus margin-free, 22 mm. in width and approximately 35 mm. to 50 mm. in length. To facilitate drying, the slide is rapidly waved through the air. The name of the patient and the date are recorded on the blood smear near the edge of the thick portion of the film (Figure 1-B). The film is stained with Wright's stain.

Determination of "Usability"

The stained blood smear is placed under the microscope, and with the low power eyepiece 10x and objective 10x (16 mm. 0.25), the thick part, lateral edges, feather edge including tails, and the mid-portion of the blood film are surveyed for the character of the distribution of the leukocytes. Particular attention is given the location of the "minority leukocytes." A blood smear is usable when (a) well stained and (b) the distribution pattern of the leukocytes is fairly uniform throughout the "usable area."

Should the edges of the blood film contain numerous leukocytes and the mid-portion show a very sparse concentration of leukocytes, the technique for non-standard blood smears is applied (see "Determination of Major Leukocyte Ratio and Differential Leukocyte Ratio from a Non-standard Blood Smear" below).

Boundaries of the Usable Area

The blood smear is removed from the microscope and a drop of immersion oil is placed about midway of the total length of the smear. A 22x22 mm. coverslip is dropped over the oil and the latter allowed to spread throughout the coverslip area. The blood smear is then returned under the microscope for the determination of the boundaries of the usable area."

With the low power a vertical survey of the thick portion of the blood film is made. Where the erythrocytes slightly overlap or touch each other, and are not more than one cell diameter apart across the entire width of the smear, the edge of the coverslip is moved to this area. With a pencil the edge of the coverslip is marked on the blood smear for future reference. Thus the "maximal boundary" of the usable area is established (Figure 2-A).

Next a survey of the erythrocyte concentration near the coverslip edge at the thin portion of the blood film is made. If the maximal boundary has been correctly determined, the erythrocytes in this area will be from one to three cell diameters apart. This area is referred to as "minimal boundary" (Figure 2-B). Thus the "usable area" is demarcated by the 22x22 mm. coverslip which remains on the blood smear for the approximation of the differential leukocyte ratio (differential count) and the total leukocyte count (WBC).

Total Leukocyte Count

While chance distribution of the leukocytes in a blood smear as well as in the counting chamber introduces errors, experimental data revealed that determining the total leukocyte count (WBC) from a blood smear within the variability of the chamber count is possible. It could be statistically ascertained that the leukocyte figure per average low power field and average large counting chamber square are approximately the same. Thus the total leukocyte count (WBC) may be calculated from a blood smear.

Assuming the total leukocyte count is 10,000 /c. mm., chamber loading trials showed the leukocyte concentration in one large square to be between forty and sixty leukocytes. This irregular cell dispersion is the result of unavoidable random settling of the cells. Thus, by selecting four low power fields within the usable area, that is, one in which there is a maximum concentration of leukocytes, one with a minimum concentration (about one half of the maximum figure), and two leukocyte concentrations between these two extremes, the figures may be averaged and the total leukocyte count (WBC) determined by employing the same arithmetic used for the counting chamber method. For the sake of continuity, the latter procedure is reviewed below.

Counting Chamber Method

For the leukocyte count blood is drawn to the 0.5 mark in the dilution pipette and diluted to the 11 mark, thus producing a dilution of 1/20 of the blood sample. The leukocytes are counted in the four large squares and the total number divided by 4 to obtain the leukocyte concentration of one large square. The resulting figure is multiplied by 10 to convert the number of leukocytes found in 0.1/c. mm. to the number of leukocytes contained in 1.0/c.mm. The latter figure is multiplied by 20 to correct for the dilution of 1/20. The conversion factor is, therefore, 10x20=200. Assuming the leukocyte concentration per single large square is 50, then the following calculation is applied: 50x200 gives 10,000/c. mm.

Blood Smear Method

Within the usable area four low power fields are selected: one field in which there is a maximum concentration of leukocytes, one in which there is a minimum concentration (about one half of the maximum figure), and two fields in which there is a leukocyte concentration between the extreme figures. The four figures are added and the resulting sum divided by 4. Thus the average leukocyte concentration per low power field is obtained. This average leukocyte figure is multiplied by 20 and the resulting sum multiplied by 10. The final figure represents the total leukocyte concentration per cubic millimeter. Examples of the calculation method are given below.

Example	A	B	C
Max. Leukoc. Conc./lpf.	200	68	10
	165	55	8
	127	43	6
Min. Leukoc. Conc./lpf.	100	34	4
	592	200	28

A. 592÷4=148 /lpf. x 20=2960 x 10=29,600 /c. mm.

B. 200÷4=50 / lpf. x 20=1000 x 10=10,000 /c. mm.

C. 28÷4=7 /lpf. x 20= 140 x 10= 1,400 / c. mm.

Major Leukocyte Ratio

A single oil immersion count of 100 leukocytes done by the consecutive field method on a smear made from normal blood may result in a variation range of neutrophils from 55 to 75 per cent and lymphocytes from 12 to 38 per cent. A minority cell such as the eosinophil may vary from 2 to 8 per cent, and the basophil from 0 to 3 per cent. While it appears that gross errors seem to be inversely proportional to the number of leukocytes counted, the figures actually reflect the chance distribution of the leukocytes in a blood smear.

It is the purpose of the "major leukocyte ratio" (MLR) to minimize not only the gross error between the two major leukocyte groups, namely, the myeloid and lymphoid groups, but also to establish the proper relationship of the minority cells to the major groups. The "major leukocyte ratio" (MLR) is determined with the aid of the low power.

Within the usable area 10 low power fields are selected in which the leukocyte concentration approximates the average leukocyte figure obtained for the computation of the total WBC/c. mm. by either the counting chamber or the blood smear method. Let us assume the average is 50 leukocytes. Thus the low power fields are chosen that show between forty to sixty leukocytes. The fields are selected in the following areas: two fields each near the maximal and minimal boundaries, two fields at the lateral edges of the smear, and two fields in the mid-portion of the usable area. While surveying these fields the leukocytes are divided into two major groups, namely, "myeloid" and "lymphoid." The major groups incorporate the following leukocytes:

Myeloid Group.

The stab form, neutrophil, eosinophil, basophil, monocyte and immature forms of either cell strain.

Lymphoid Group:

The lymphocyte, plasma cell (plasmocyte) and immature forms of either cell strain.

When a leukocyte cannot be identified under low power, the high dry objective is used. The latter will not become soiled, since the coverslip overlays the oil film.

The myeloid and lymphoid figures obtained are used for the determination of the "major leukocyte ratio" (MLR) by dividing the larger by the smaller sum. Because of the large number of cells counted for ascertaining the MLR the latter becomes a "constant." Thus by reflecting the true numerical relationship between the myeloid and lymphoid cells the MLR reduces the gross differential counting error between these major cell groups to a minimum.

While 10 low power fields are adequate for obtaining a reliable MLR, the number of fields may be increased or decreased depending on the distribution and concentration of the leukocytes. For example, when the total leukocyte count is above 15,000/c. mm., the number of fields may be reduced to five; however, the fields must be selected in the same general areas as recommended for the ten field survey.

Differential Leukocyte Ratio

The "differential leukocyte ratio" (DLR), that is, the approximation of the differential count, is determined with the aid of the low power. The number of fields needed for ascertaining the DLR is dependent upon the frequency with which the leukocyte concentration per low power field corresponds to the average leukocyte concentration computed for the total leukocyte count (WBC), and upon the presence or absence of minority leukocytes. Because the eosinophil, basophil, monocyte, plasma cell, and immature leukocyte scatter more irregularly than the neutrophil and lymphocyte, it is, therefore, absolutely imperative that a careful survey be made of the "usable area" pertaining to the presence, absence, location and concentration of the various types of leukocytes before the determination of the "differential leukocyte ration" (DLR) is attempted. This step minimizes the possibility that a minority leukocyte will be reported absent when actually present. Keeping in mind that the percentile is used for determining whether a leukocyte is "absolutely" increased, decreased, or unchanged, it is imperative that the relationship of the minority leukocytes within the respective major leukocyte group be accurately established.

Assuming the major leukocyte ratio is 4:1, there are then 80 myeloid to 20 lymphoid cells. The leukocyte types are tabulated according to their relationship to the major leukocyte groups (Table II). In case a leukocyte exceeds, or is less than its normal value for a certain age group (Table I), another 80 myeloid or 20 lymphoid cells are counted. However, the total number for each major group is not to exceed three times the group value, which in the hypothetical case cited above would be 80x3=240 myeloid or 20x3=60 lymphoid cells, that is, a total of 300 leukocytes. Recounting of the lymphocytes is of course not necessary when there is no plasma cell or immature form of either cell type. Because there is no data in the literature showing that decimal fractions have clinical significance, they are deleted with the aid of a rule adopted for this purpose (Table II). The leukocyte values are thus recorded in whole numbers which are duplicable and compatible with the "true per cent" values of Goldner and Mann.

To illustrate the statement just made: Goldner and Mann found that for the "true per cent" value of 70, the upper and lower limits of error were 64 and 76 respectively. Our experimental data revealed that by selecting the highest and lowest value of a leukocyte per low power survey, a value compatible with the "true per cent" value of Goldner and Mann may be found. The manner of recording, computing the numerical values of the minority leukocytes, and balancing the "differential leukocyte ratio" (DLR) is shown in Table II.

TABLE II

HOW TO TABULATE MINORITY CELLS, COMPUTE LEUKOCYTE VALUES AND BALANCE THE "DIFFERENTIAL LEUKOCYTE RATIO (DLR)

Major Leukocyte Ratio 4:1

	Myeloid						Lymphoid			
Low Power Survey	Stab	Eos.	Bas.	Monoc.	Pmn.	Total	Plasma cell	Lym.	Total	Grand Total
I	2*	5*	0*	9*	64*	80	1*	19*	20	100
II	6*	0*	0	2*	72*	80	1	19	20	100
III	4	2	1*	4	69	80	3*	17*	20	100

RULE

Select the highest and the lowest number of the individual differential leukocyte figures (*), add, and divide by 2.

Raise fractions 0.1 to 0.9 to the next whole number. Delete fractions 0.1 to 0.9 when preceded by a whole number.

EXAMPLE: "A"

	Stab	Eos.	Bas.	Monoc.	Pmn.	Plas.	Lym.
High	6	5	1	9	64	3	19
Low	2	0	0	2	72	1	17
Total	8	5	1	11	136	4	36
Average	4	2.5	0.5	5.5	68	2	18
Balanced DLR	4	2	1	5	68	2	18

FINAL TABULATION OF THE "DLR"

Stab	4		
Pmn.	68		
Eos.	2	80	
Bas.	1		MLR 4:1
Monoc.	5		
Lym.	18	20	
Pl. C.	2		

EXAMPLE: "B"

Major Leukocyte Ratio (MLR) 9:1

Low Power Survey	M'bl.	M'cyte	Meta-Stab	Pmn.	Eos.	Bas.	Monoc.	Total	Plas.	Lym.	Total
I	10	30	10*	15	11	8*	6*	90	0	10*	10
II	12*	26*	6*	20*	14*	10	2*	90	0*	10	10
III	8*	36*	8	13*	9*	12*	4	90	1*	9*	10
High	12	36	10	20	14	12	6		1	10	
Low	8	26	6	13	9	8	2		0	9	
Total	20	62	16	33	23	20	8		1	19	
Average	10	31	8	16.5	11.5	10	4		0.5	9.5	
Balanced DLR	10	31	8	16	11	10	4		1	9	

FINAL TABULATION OF THE "DLR"

M'bl.	10		
M'cyte	31		
Meta'cyte } Stab }	8		
Pmn.	16	90	
Eos.	11		MLR 9:1
Bas.	10		
Monoc.	4		
Lym.	9	10	
Pl. C.	1		

To find the absolute value of a leukocyte, the percentile is multiplied by the total leukocyte count (WBC).

Example: Eos. 2% x WBC 9,000/c. mm.=Eos. 180/c. mm.

Because physicians and laboratory personnel are frequently vague about the normal values of the minority leukocytes in the major age groups, the figures used in our Hematology Section are presented below.

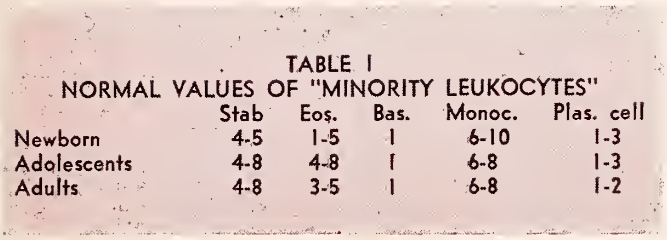


TABLE I

NORMAL VALUES OF "MINORITY LEUKOCYTES"

	Stab	Eos.	Bas.	Monoc.	Plas. cell
Newborn	4-5	1-5	1	6-10	1-3
Adolescents	4-8	4-8	1	6-8	1-3
Adults	4-8	3-5	1	6-8	1-2

Major Leukocyte Ratio and Differential Leukocyte Ratio From a Non-Standard Blood Smear

In case a differential leukocyte ratio (differential count) must be made from a non-standard blood smear, that is, a short, thick, or wavy and irregular thick blood film, or a blood smear which is going off the glass slide, at least three MLR and DLR must be made to minimize gross differential errors. The locations of the counting areas for the approximation of the ratios are identified in Figure 3. The areas are: Feather edge (1), lateral edge (2), and mid-portion (3). It is desirable to establish a "usable area" whenever possible. Also, the same number of ratios and counting areas are required when there is an extreme accumulation of leukocytes at the lateral edges, the feather edge or the mid-portion of the blood smear.

The individual ratios are averaged and the resulting sums are used for the approximation of the final differential leukocyte ratio.

Summary

A technique is presented for the approximation of the "differential leukocyte ratio" (DLR) and total leukocyte count (WBC) from a standard margin free blood film. The method takes into account the chance distribution of the various types of leukocytes in a blood smear as noted by Davidson. It incorporates (1) a "major leukocyte ratio" (MLR) which is based on the total leukocyte count and expresses the numerical relationship between the major leukocyte groups, namely, myeloid and lymphoid cells, and (2) serves as a guide for the approximation of the numerical values of the "minority leukocytes," such as the eosinophil, basophil, monocyte, plasma cell (plasmocyte) and immature forms of the various leukocyte strains. Per cent fractions are deleted. Thus, the final numerical leukocyte values are recorded in whole numbers which are accurate, duplicable, and compatible with the "true per cent" values of Goldner and Mann.

The physician may, therefore, accept with confidence the results obtained with the "differential leukocyte ratio (DLR) technique and thus may integrate the differential leukocyte values with the clinical picture without first assessing technical gross errors in leukocyte counting.

Aknowledgement

The author is indebted to Mrs. Marilyn Berg, Miss Marjorie Colmer, Medical Technologists, and Mrs. Marlene Rients, Hematology Section, for their interest and demonstration of the "differential leukocyte ratio (DLR) technique" as an accurate and practical routine procedure. Further thanks are expressed to the above-cited personnel for checking the total leukocyte count (WBC) obtained by means of the blood smear technique with the manual counting chamber and Coulter electronic counter method.

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THE OEDIPUS COMPLEX

Among the common terms employed in psychiatry is Oedipus complex. Oedipus is a Greek word meaning swollen foot. How then did the mother-fixation phenomenon in psychiatry come to be known as the Oedipus complex? Here in brief is the starkly tragic legend.

At the birth of a son, Laius, King of Thebes, was warned by an oracle that his throne would be in danger if the son were allowed to survive. He therefore gave the infant to a herdsman, with instructions to destroy the child; but the herdsman, too soft-hearted to carry out the assignment, hung the baby in a tree by his feet and abandoned him. So suspended the infant was discovered by a peasant and taken to his master and mistress, who adopted him and called him Swollen Foot, or Oedipus.

Many years later when Oedipus was one day driving his chariot along a narrow road to Delphi, he met the King and his attendant, who ordered him to move out of their way. When he refused, the attendant killed one of his horses, which so enraged Oedipus that he retaliated by killing both the King and his attendant, thus becoming unwittingly the slayer of his own father.

Shortly afterward the city of Thebes became afflicted with a monster, the sphinx, half lion and half woman, which crouched on top of a rock and stopped all travelers on the main road, proposing to each a riddle. Those who could solve it were permitted to pass safely by, while those who could not were killed. Oepidus, undaunted by this terrible creature, boldly presented himself and solved the riddle, whereupon the sphinx dashed herself to death on the rocks.

In gratitude the Thebans made Oedipus their king and gave him their widowed queen, Jocasta, in marriage, thus making both guilty of the heinous crime of incest.

Some years afterward when consultation with an oracle revealed the brutal facts hitherto unknown to both Oepidus and Jocasta, the impact of the terrible revelation was so great that in remorse Jocasta hanged herself and Oedipus tore out his eyes.

From this Greek myth modern psychiatry has derived the term Oepidus complex to designate the abnormal phenomenon of mother fixation on the part of a son.

HERE'S THE ANSWER TO WHAT'S YOUR DIAGNOSIS

From page 913

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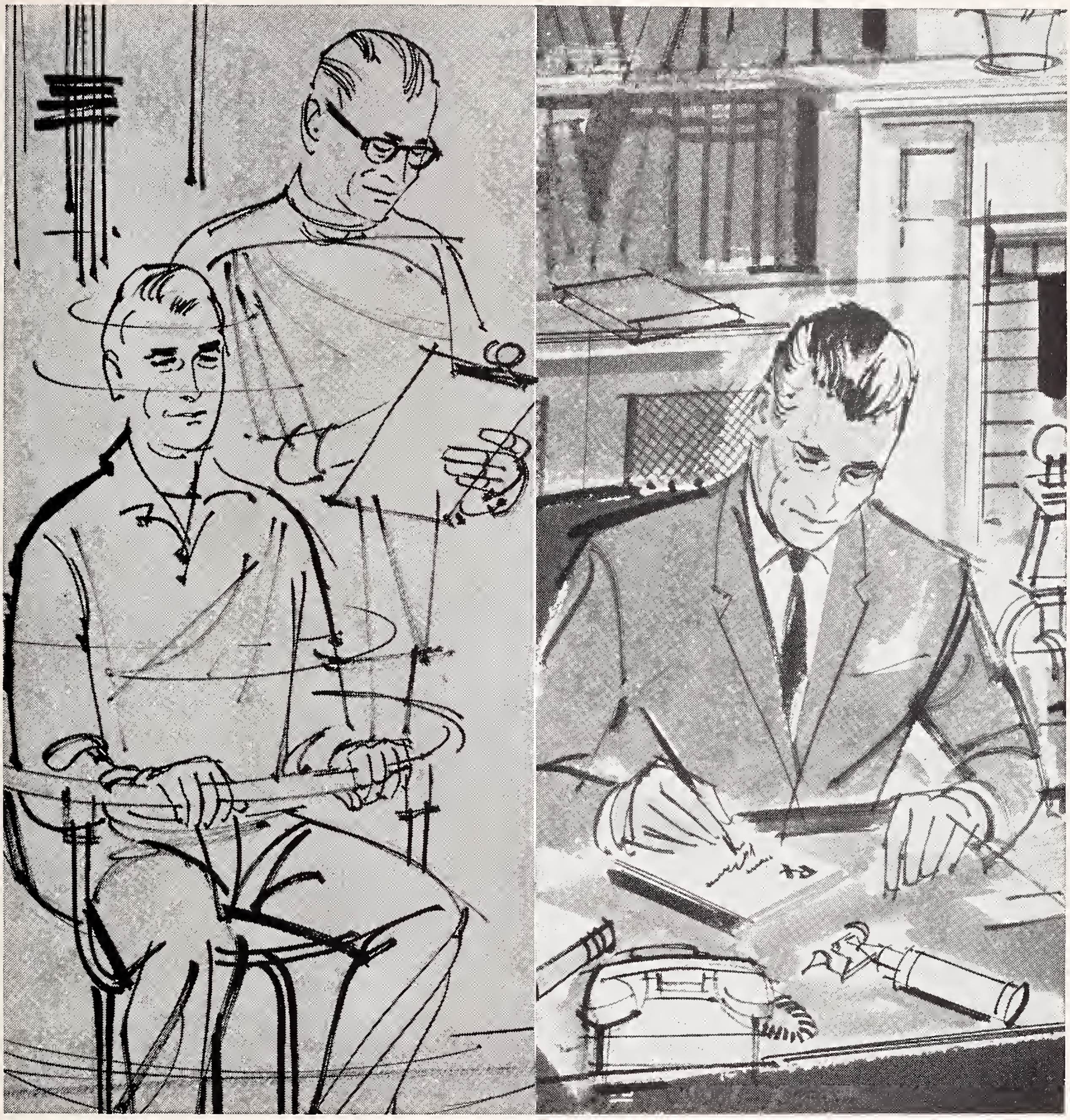

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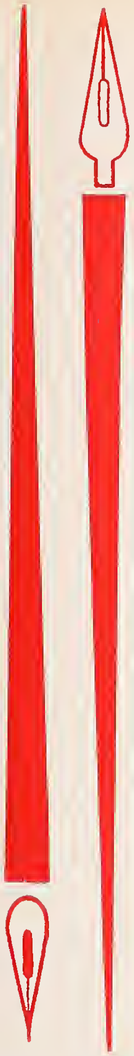

Editorials

Something for Nothing

A something-for-nothing philosophy has invaded and is corrupting our national mores. In the case of the ignorant the practice of this philosophy is thoughtless and ingenuous; with the more sophisticated, it is cynical and calculated: a why-not-get-mine attitude. At no cost to ourselves we expect and demand favors, compensation, relief, insurance, subsidies, etc. — beyond what we are legally and morally entitled to. We have become liability-minded: a nation of "free-loaders." In short, we want something for nothing.

In this editor's opinion what we think we are getting free we are actually paying an appalling price for, namely, our ethical, intellectual, and spiritual integrity.

It has been said that doctors are "in trouble" because of the increase in lawsuits against them. But lawsuits in themselves prove nothing; they do not necessarily impugn the defendants; they may represent nothing more than reprehensible efforts on the part of unscrupulous persons to get something for nothing. Even adverse court decisions may mean nothing more than a jury too over-sentimental to be completely objective and impartially judicial.

But it is easy and convenient to make the doctor a scapegoat; a tendency all the more unfortunate and regrettable, since from time immemorial the doctor has served with credit and distinction as counselor in social, economic, and even political circles. Must today's heritage for this contribution of extra-curricular services be the thankless charge that the doctor is carrying his "pompous attitude outside the sphere of his competence?"

Incidental but appropriate to the discussion this editor, in the capacity of amateur economist and statistician and at the risk of seeming "pompous," would like to interject a comment on the "mounting indignation over the increased cost of medical service." Some years ago a hospital could function on a 2 to 1 patient-employee ratio; but a modern, well-run hospital of today cannot function with a smaller ratio than 1 to 2.5 patient-employee ratio. (No patient will tolerate less than a modern, well-run hospital.) Must the doctor be blamed for the ever-mounting cost of labor? Must the doctor be blamed for labor's arbitrary rules which dictate that the cleaning-woman be not allowed to give a thirsting patient a drink of water or the practical nurse not allowed to wipe up the water she herself may have spilled? These are labor rules and are deplored as much by the doctor as by an irate public. The doctor has no more jurisdiction over unions operating in hospitals than he has over railroad or airline unions, whose pernicious "feather-bedding" practices have become a bitterly and stubbornly controversial issue.

Further, doctors are accused of opposing medicare legislation. We admit the charge and we do so openly and unqualifiedly for two reasons. First, we are opposed to ever-mounting government expenditures for welfare because we believe that medical costs can be defrayed more economically, efficiently, equitably through voluntary health insurance plans. Second, we deplore the decay of old-fashioned, individual self-reliance; we believe people should pay their own way through life whenever possible, not have it paid for them unless they are financially unable to do so.

We believe a welfare state in our democracy is evil. We oppose government charity for those who do not need charity. We oppose getting something for nothing.

Carl O. Rice, M.D.
Minneapolis, Minnesota

Continued

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Postoperative Atelectasis

Atelectasis is the most common pulmonary complication of surgical procedures and is especially frequent following upper abdominal operations. Inspissated secretion produces bronchial obstructive plugs and may involve any portion of the bronchial tree from small subsegmental bronchi up to and including the main stem bronchus.

Many factors are involved in the development of atelectasis and these deserve special consideration in the preoperative and postoperative periods as well as during the operative procedure. Normally, elaborate natural defenses are present which keep the bronchial tree cleansed. In the main these consist of (1) ciliary action, (2) liquefying effect of secretory cells, (3) peristaltic and rhythmic bronchial contractions, and (4) expulsive action of the cough reflex. The presence of pre-existing bronchial damage and any interference with these defenses may lead to bronchial obstruction and atelectasis.

The diagnosis of atelectasis is not difficult and can be confirmed on the basis of the symptoms of fever, tachypnea, tachycardia, and the physical and roentgen findings. Early recognition and energetic therapy is mandatory to prevent the additional complications of infection and suppuration which may lead to permanent damage.

Most patients recover uneventfully but serious difficulties may supervene, especially in those individuals with pre-existing bronchial or pulmonary insufficiency. Improved operative and anesthetic techniques have led surgeons to accept borderline risk cases, though these may require special care. A wise surgeon and a cautious anesthesiologist will inquire into the pulmonary status of every prospective surgical patient.

Prevention

Prevention of pulmonary complications, including atelectasis, is more important than the most energetic subsequent treatment. Measures which assist in prevention include (1) the avoidance of deep narcosis before, during, and after surgery, (2) proper positioning of the patient to facilitate bronchial drainage, (3) changing the position of the patient at frequent intervals, (4) hyperventilation on a voluntary or forced basis, (5) encouragement of the patient to cough with assistance as needed, and (6) adequate hydration. Antibiotics probably have no place in the prophylaxis of atelectasis.

Treatment

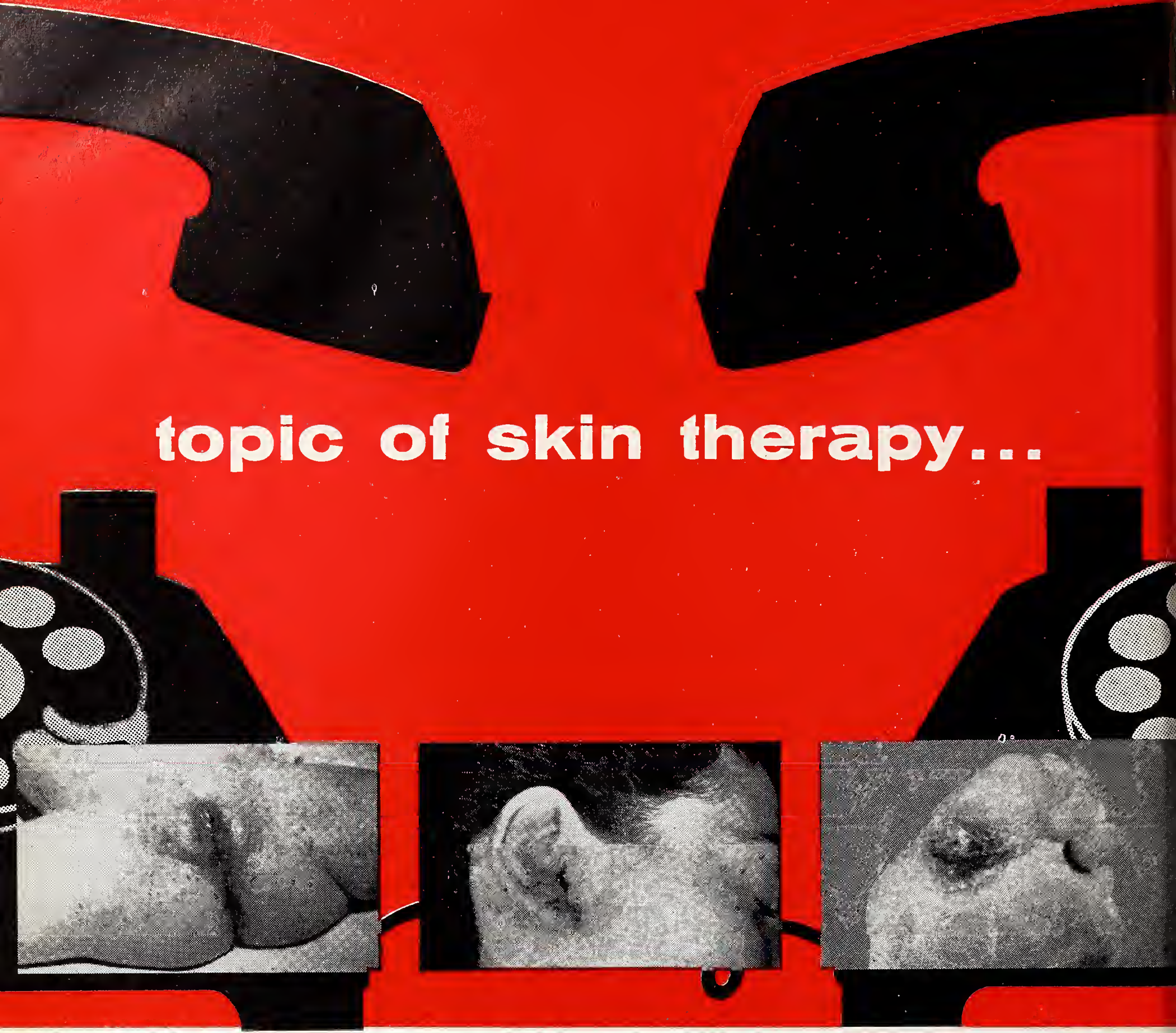
Prompt therapy is indicated when atelectasis is suspected or proven. The principle of therapy is the removal of the obstructive secretion, the correction of hypoxia, and the prevention of superimposed infection and suppuration. Early correction prevents infection and suppuration which may lead to irreversible damage. Measures for correction of the obstruction include (1) suctioning of the tracheobronchial tree, (2) inhalation of carbon dioxide-oxygen mixtures to stimulate the cough reflex and overcome hypoxia, (3) instillation of nebulized enzymes and detergents to aid in dissolution of the inspissated material, (4) the administration of bronchodilators and expectorants to overcome reflex bronchial spasm, (5) the insertion of a bronchoscope to assist in removal of retained sections and, in severe cases, (6) tracheostomy, to permit frequent aspiration and to reduce dead space.

In this issue of Minnesota Medicine, Simenstad et al. describe a new method of treatment and present experimental data to support their thesis. Their ingenious experiments utilizing a saliva-mucin mixture to simulate bronchial obstruction as observed clinically, and the use of normal saline irrigation with aspiration to remove the inspissated secretion, represent an excellent laboratory and clinical study.

A word of caution needs to be emphasized. Saline irrigation of the tracheobronchial tree should not be undertaken lightly since the procedure temporarily increases airway resistance and decreases lung compliance. It is essential, therefore, that assisted breathing with a positive pressure apparatus be utilized to counteract the effect on resistance and compliance. They have demonstrated that their method of treatment with proper precautions has proven successful when all other methods have failed.

Postoperative atelectasis is, in the main, preventable if proper consideration is given to the status of the respiratory tree preoperatively and simple precautions are utilized. When atelectasis does develop in spite of these precautions, emergency measures should be carried out to prevent the possibility of serious and permanent sequelae.

Sumner S. Cohen M. D.
Minneapolis, Minnesota



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Our Senior Educators

Moses Baron M. D.
Minneapolis

Some doctors are more than doctors. They are citizens. One such is Moses Barron—and he is a citizen of many communities. He is also at 78 about as zestful a Minneapolis practitioner as any 25-year-old, a rare grand old man of medicine who is not old in manner or medicine.

He is of course a citizen of the scientific community. One night in 1920 in London, Ontario, the young Dr. Frederick Banting read the leading article in the current *Surgery, Gynecology and Obstetrics.* It was by Dr. Moses Barron of the University of Minnesota. Its title was "The Relation of the Islets of Langerhans to Diabetes with Special Reference to Cases of Pancreatic Lithiasis." Many scientists already believed that the islets of Langerhans might contain a diabetes-controlling hormone. All attempts, however, to produce a successful extract had failed. They failed, we know now, because the extracts were made from the whole pancreas, and

Continued

other powerful substances destroyed the hormone produced by the islets.

Dr. Barron's article told how pancreatic stones blocked the pancreatic ducts and caused atrophy of the pancreas, except for the islets of Langerhans. Ligating these ducts, Barron's article said, caused similar changes.

The implication was that an extract containing the islets' secretions might then be obtained without the destructive hormones secreted by the other cells of the organ. Banting read and reread this article and at two o'clock in the morning wrote in a small black notebook: "Tie off the pancreatic ducts of dogs. Wait six or eight weeks. Remove and extract." Early the next morning he rushed to the hospital to show the Barron article to associates. The experiments were made. The result was insulin. Banting (who died in 1941) repeatedly gave Moses Barron credit for his contribution.

Yet this is only a small part of Dr. Barron's life, which began in Kovno, Russia, on November 8, 1883. In Kovno, his father was a yeshiva bocher—a seminary bookworm—a religious scholar who lived on the good offerings of the community. "The most he did," Dr. Barron remembers, "was wash his hands and make a blessing for his meals." Pogroms drove the scholar to America to become a peddler with tin pots on his back. He worked his way west, bought a horse and wagon and reached western Minnesota.

A farmer in northwest Stevens County, eight and one-half miles from Herman, told the peddler he'd like to sell out. The landless scholar was captivated. He paid the farmer $700 and sent to Russia for his family, including Moses, aged five and one-half.

"The farmhouse was one room," Dr. Barron remembers. "Father, believe me, knew as much about farming as you know about buying the Brooklyn bridge. He planted onions roots up. We had fires. Our horses died. But we lived."

The boy walked three and a quarter miles to go to a one-room country school with little children and six-foot six-inch farm lads. At eight he was handed a year-end speaking piece which read: "When I am a man, a doctor I'll be." His early schooling, with bitter winters and with fall and spring work on the farm, was limited to 50 or 60 days a year, but, Dr. Barron reports, "The idea clung."

The price, in his teens, was hard study and after-school work and financial sacrifice in Fargo and St. Paul. In 1905, at 22, he became one of the first students in the University of Minnesota medical school's new six-year course, which included two years of pre-med. He won his B.S. in 1910, his M.D. in 1911, and at 28 became the first intern at the present University Hospitals' first permanent unit. As the only intern, he enjoyed a complete rotating internship all at once. "In the mornings the surgeons operated, and I assisted. In the afternoons I made rounds with the internists. In the evenings I delivered the babies, 50 or 60 that year."

Next he studied pathology and bacteriology. He won membership both in Alpha Omega Alpha, honorary medical fraternity, and in Sigma Xi. He taught pathology for 10 years. Friends said, "You'll never practice." He replied, "No, I'm preparing myself." After war service in France—rising from Medical Corps lieutenant to major—he returned home, tirelessly took a 1920-21 residency in internal medicine, then was ready to practice, at age 37.

Why did he still want to practice? "I wanted to come into contact with patients," he explains. "Once in 1,000 patients a doctor can say, 'I've saved a life.' Jewish law says it you save one person's life, it's as if you saved the world."

His main contribution as a physician, his contemporaries know, has been the application of sound pathological knowledge to diagnosis and therapy. He is an exponent of thorough grounding in pathology to be used in diagnosis. He is one of

Continued

the pioneers of internal medicine. At the university, as professor of medicine until 1952, he was one of the medical school's outstanding teachers. His clinics have always been thoroughly attended.

"Man is guided by two things," he believes, "wisdom and intelligence. And the greatest is wisdom. In medicine you have to know a lot of things, but to treat the whole patient requires wisdom. This is one of the most common failures today, to treat a single ailment and forget the whole patient. When a patient comes to my office he expects relief. If he leaves feeling no better I have failed, no matter what his condition. Helping him feel better requires wisdom."

"You ought to see him at a conference," comments a friend at Mt. Sinai Hospital, which he helped organize and where he served as first chief of staff. "If he gets an interesting case, he practically goes down the hall grabbing residents. He feels it's too instructive, he doesn't want it to go to waste."

His voice on such occasions is loud and clear. Sometimes it booms. He can be very dogmatic. "I'll tell you!" he says in firm tones. "And he's usually right," remarks a colleague.

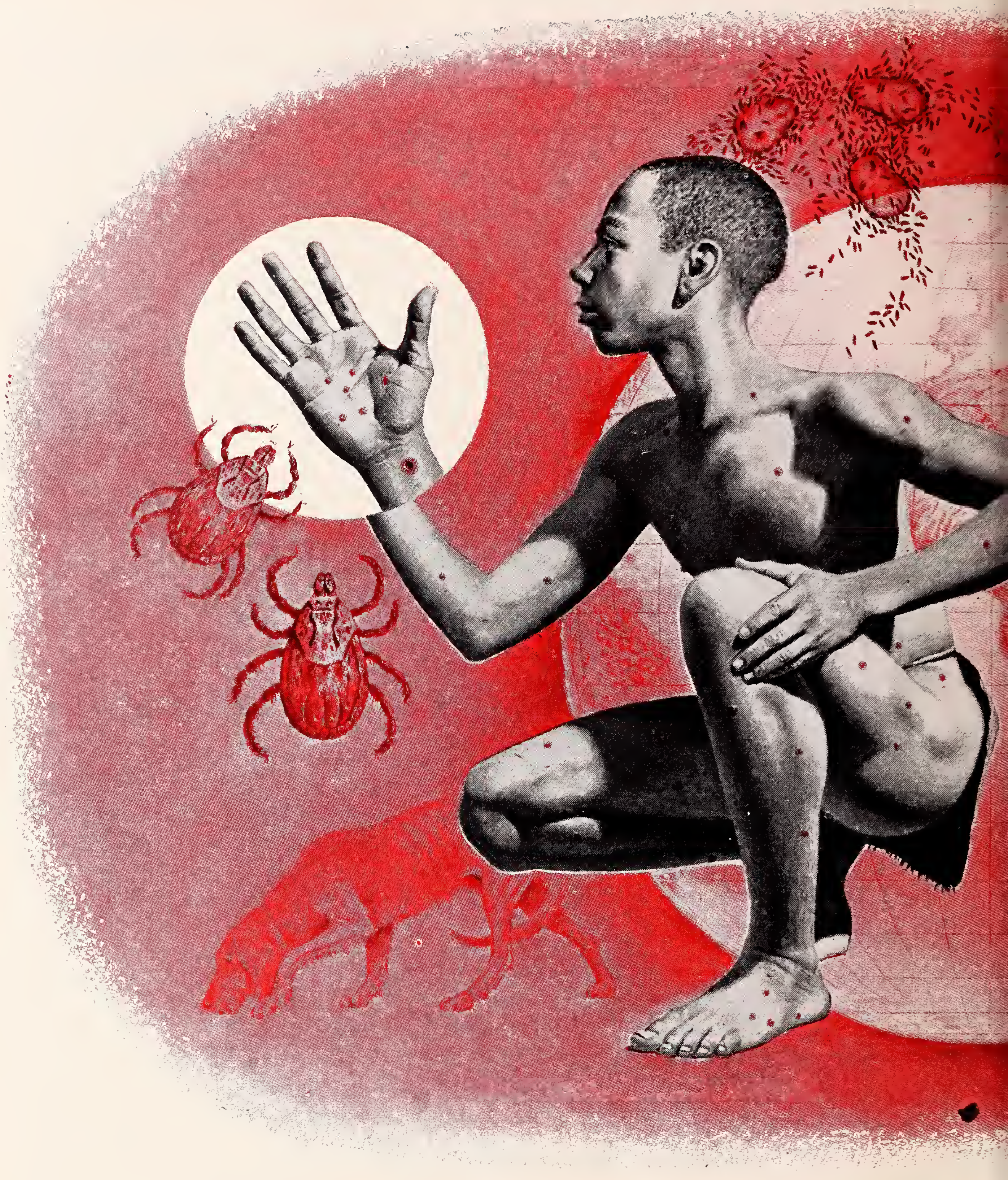
He has a biblical face, and Bible lore pours from him. He is a fiercely proud citizen of Jewry and a much-honored Zionist. Israel, which was then Palestine, became a co-cause with medicine when he was young. In 1934 he and Mrs. Barron (who was Leah Fligelman) founded the Twin City Chapter of the American Friends of the Hebrew University, which today has more than 90 chapters in the United States. In 1947 a Dr. and Mrs. Moses Barron Forest of 10,000 eucalyptus trees was planted near Haifa in their honor. In 1956-57 $100,000 was raised in Minneapolis to build a Dr. and Mrs. Moses Barron Medical Center in Israel. Among other distinctions he is an honorary fellow of the Hebrew University of Jerusalem.

As a busy American citizen, however, he has visited Israel only once. He has simply been too active a doctor. He insists: "American Jews owe Israel no loyalty as a country. We do not have a double loyalty. We're supporting Israel because we think it's good for the entire world to show how a democratic state can be built in that part of the world."

He continued teaching part time at the University until June 29, 1952, when he was made professor emeritus precisely 63 years after the day he arrived in Minneapolis, en route to western Minnesota, as a little boy. He has shared his office and knowledge with several keen associates, the first of them, the late Dr. M. H. Nathanson, an outstanding cardiologist; the second, Dr. Reuben Berman. In 1931-32 Dr. Barron headed the Hennepin County Medical Society. Diabetes has always remained his chief interest. In 1951 he headed the first Minneapolis diabetes detection drive that caused several thousand unabashed persons to leave urine specimens with Minneapolis druggists. He resigned hotly from the American Medical Association around 1949-50 — in disagreement with its tactics and stand on government health insurance — but later rejoined.

In the words of Mr. Samuel H. Rogers, first vice-president of the First National Bank and a member of the board of St. Barnabas Hospital, when he handed Dr. Barron the coveted 1961 St. Barnabas Bowl of the Hennepin County Medical Society, he is "a clinician who would rather treat the patient than the disease, who enjoys the everyday challenge of making rounds with students, whose zest for living sends him forth looking for new fields of interest to conquer; and one who spends a considerable amount of his spare time talking and lecturing to our Senior Citizens on how to enjoy their Golden Years without ever telling what he proposes to do with his when he grows old."

Victor Cohn, M.D.
Minneapolis, Minnesota



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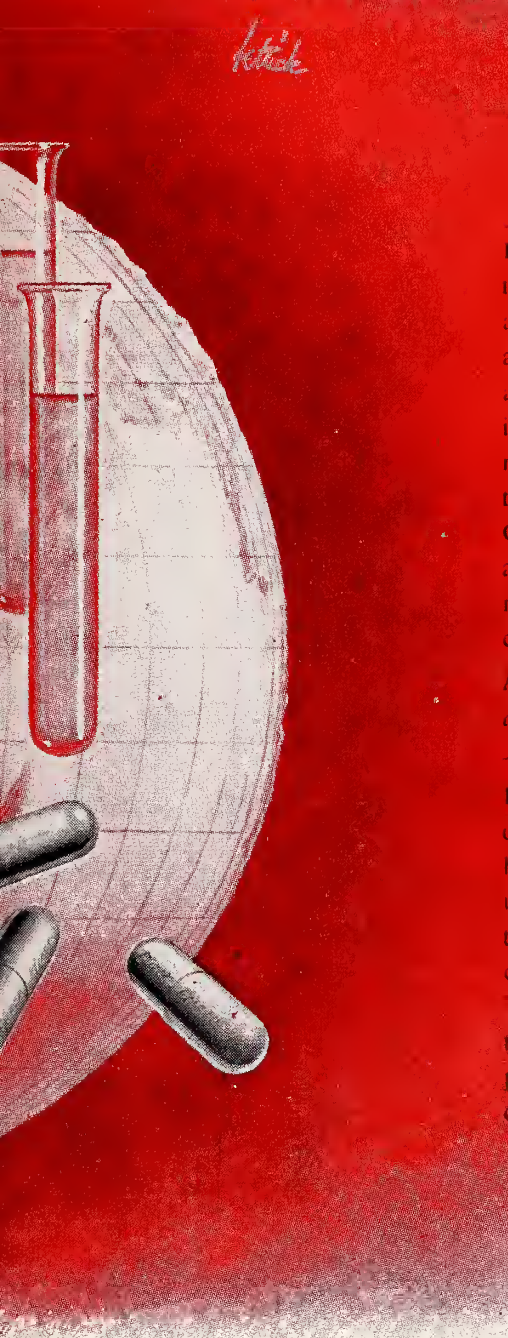

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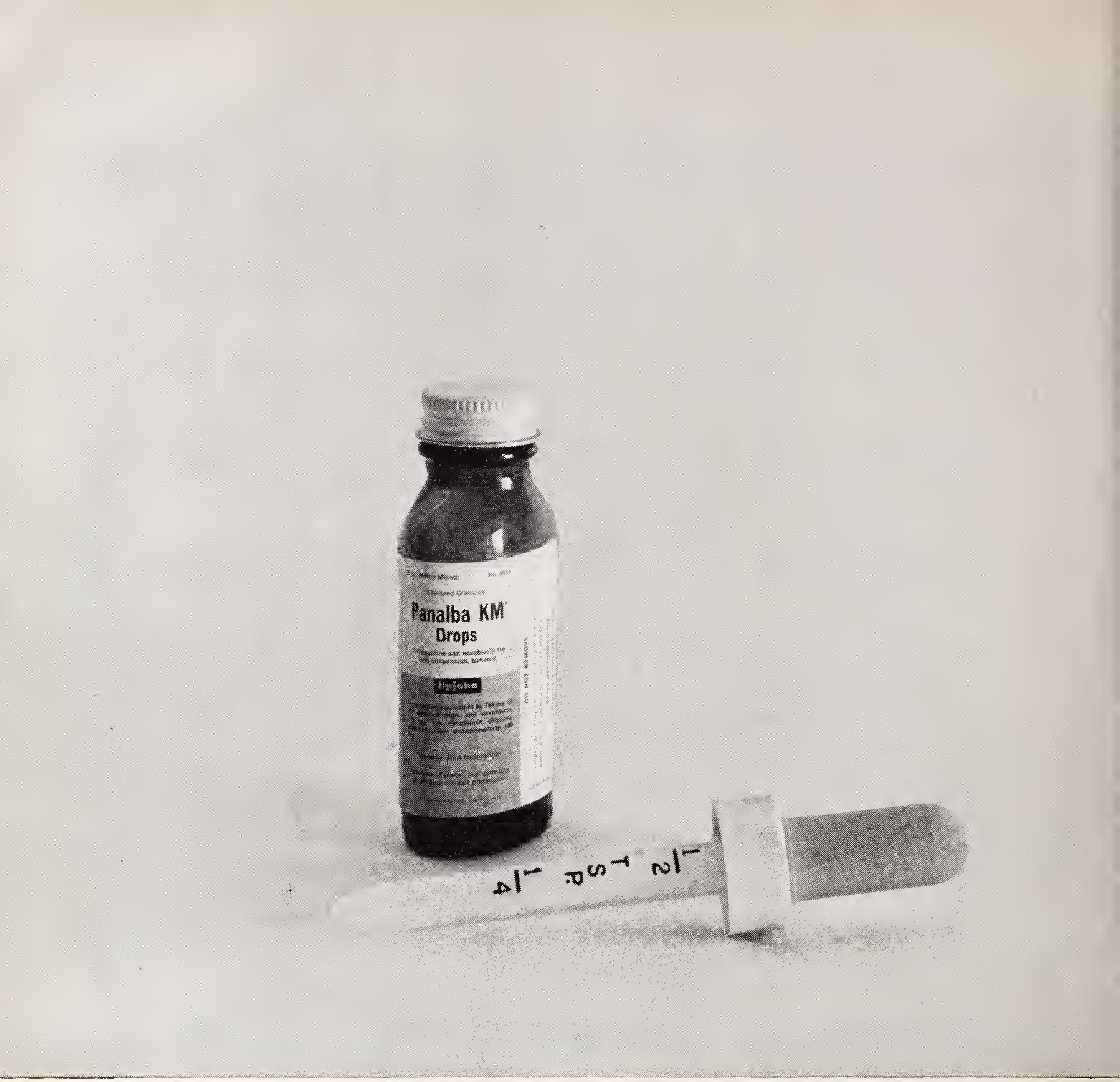

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Abstracts and Briefs

CHOLECYSTITIS IN POSTOPERATIVE PATIENTS

The authors find that acute inflammation of the gallbladder with onset during convalescence from operation on other organs, occurs more frequently than is commonly realized. Postoperative abdominal pain, fever, right lower lobe pneumonitis or atelectasis, and hypotension may obscure the basis pathologic process, the acute cholecystitis.

The group studied in this series consisted of ninety-eight patients in whom cholecystitis was discovered at a second operation or at autopsy, following initial surgery for other conditions. This problem most frequently followed operations for gastro-intestinal lesions. 58.1% of the patients were in this category. 49.1% of the cases of gastro-intestinal surgery had lesions of the colon and rectum. In the total group of ninety-eight patients, 64.2% had no previous symptoms of any kind relative to the biliary tract. It is very interesting to note that in this series 53.1% of the cases of acute cholecystitis were of the non-calculous variety, including 12.2% with free perforation. Only one-fourth of the perforation group had gallstones. Jaundice was clinically detectable in only 1.4% of the cases.

The most common signs and symptoms of postoperative acute cholecystitis were abdominal pain, nausea, vomiting, high fever, hypotension or shock, abdominal tenderness, and distension.

A very useful contribution is offered in placing focus upon a problem of this type, particularly in such a difficult period as the postoperative phase, wherein attention is more likely directed toward the more intimately associated complications directly a part of the patient's primary surgical problem. It is quite interesting to me that many patients had no previous symptoms and, furthermore, had no gallstones, both features which could very easily distract one away from the actual pathologic process. Knowledge of this problem should be a useful addition to sharpen our clinical and surgical acumen.

J. H. Strickler, M.D.
Minneapolis, Minnesota

"Acute Cholecystitis Complicating Operation for Other Diseases," Thompson, III, John W.; Ferris, Deward O.; and Baggenstoss, Archie H. Ann. of Surg. 155:489, April, 1962.

INFECTION IN LYMPHATIC LEUKEMIA

A detailed study has been made of eleven patients with chronic lymphatic leukemia whose course was complicated by recurrent infections.

In general, when the leukemia became worse the infection became worse. Nine patients had low, and two patients had borderline gamma globulin levels. In treated patients, who had a favorable response of the leukemia to treatment, the gamma globulin levels tended to rise, but not to normal. The incidence or severity of infections did not correlate with the level of circulating polymorphonuclear granulocytes.

All eleven patients had chronic or recurrent pulmonary infections, and in ten of them pulmonary infection was either a direct or contributory cause of death. Other infections included furunculosis, pyoderma, rectal abcesses, otitis media, sinusitis, pharyngitis, cystitis, thrombophebitis, pyelonephritis, septicemia, herpes zoster and simplex.

In the belief that the lung disease represented leukemic infiltration, four patients received pulmonary radiation therapy. Subsequent autopsy disclosed infection rather than leukemia in the lungs.

Gamma globulin administration was beneficial in some patients when given in large amounts. These investigators favor prophylactic antibiotic therapy as well. They also feel that adrenocorticosteroid metabolism is impaired in some patients with chronic lymphatic leukemia, and that many of them are benefited by administration of supplemental adrenal steroids.

The series of patients studied is admittedly too small for any conclusive evaluation of the therapeutic modalities suggested. There would appear to be adequate documentation of favorable responses in these individual case histories to warrant consideration of prophylactic antibiotics, gamma globulins, and adrenocortical steroids in the patient with chronic lymphatic leukemia who becomes threatened by infectious complications.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"A Clinical And Pathological Study of Resistance to Infection in Chronic Lymphatic Leukemia" Miller, D. G.; Budinger, J. M.; and Kornofsky, D. A. Cancer, 15:307 March-April, 1962.

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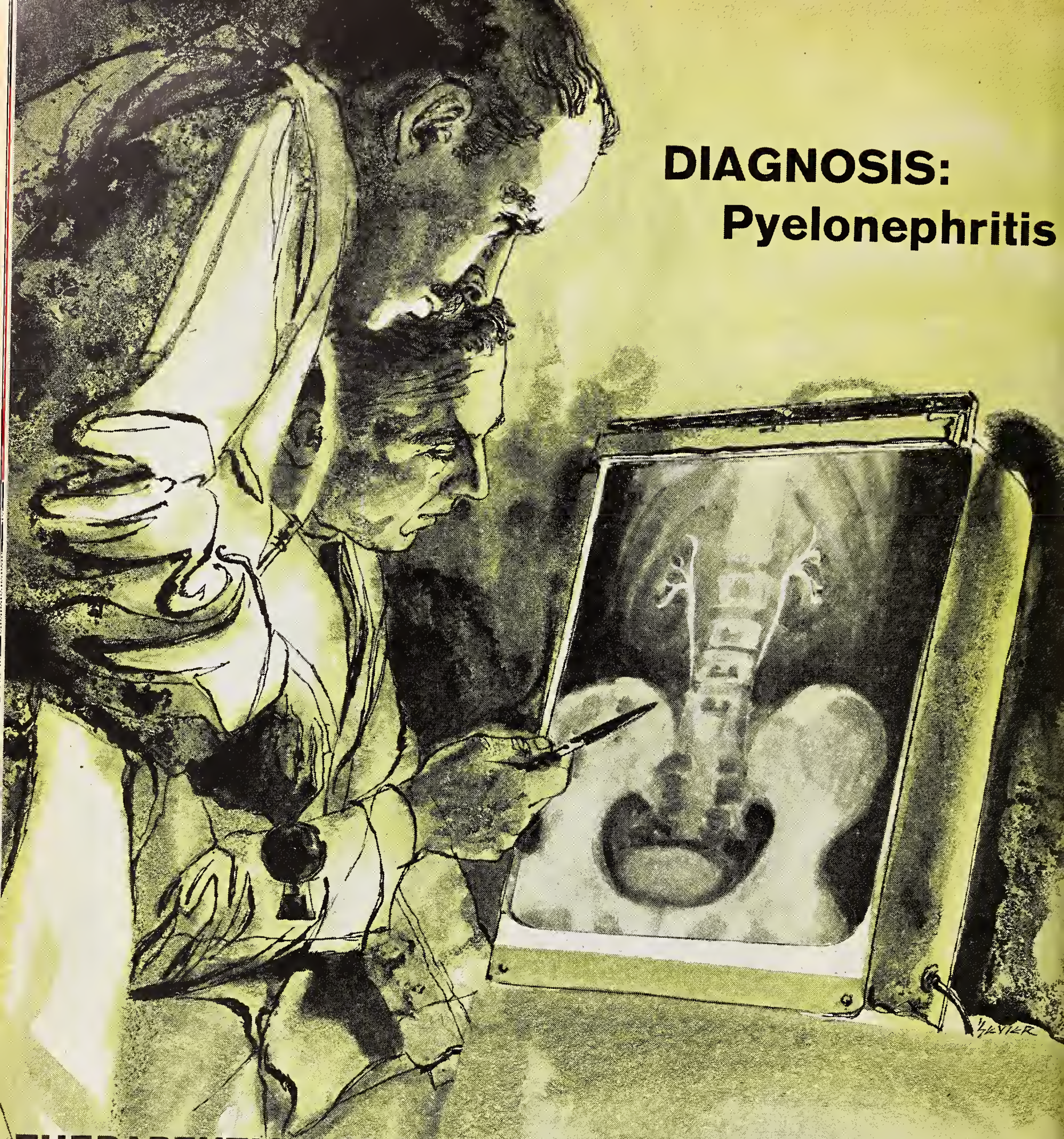

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INTERNAL BILIARY FISTULAS

The review describes experiences with 32 patients having internal biliary fistulas treated at Kings County Hospital in Brooklyn from 1949 to 1958.

The majority (85%) of spontaneous internal biliary fistulas result from chronic biliary disease associated with cholelithiasis and choledocholithiasis, but they may also be caused by peptic ulceration, carcinoma and congenital anomalies.

Twenty-three of the patients in this series had the complication of intestinal obstruction due to gall stones. The patients were elderly and debilitated, and there was a mortality rate of 47% in the nineteen operated patients.

The nine cases not having gall stone ileus had an operative mortality of only 10%.

The authors emphasize early recognition, good preoperative preparation, and prompt emergency surgical intervention for patients with gall stone ileus. Patients not obstructed may usually be more adequately prepared and treated electively. The importance of common duct exploration is discussed. Fistulas related to peptic ulcer disease require surgical management for the ulcer as well. In patients with gall stone ileus surgery should be initially limited to the emergency management of the obstruction.

Additional documentation of the severity of the complications of biliary calculi again suggests the need for early correction, prior to the development of hazardous secondary problems, and while the patient is still in a good risk category.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Spontaneous Internal Biliary Fistulas" Levowitz, B. S. Ann. of Surg. 154:241, August, 1961

TINEA CAPITIS TREATED WITH GRISEOFULVIN

Recent studies have demonstrated the usefulness of griseofulvin in the treatment of dermatomycoses. In this study, 165 children, all with proven tinea capitis, were treated with different dosages of griseofulvin in an attempt to find an optimal treatment schedule. The following programs were used: 1.25 mgm./kg., 0.25 gm. b. i. d. and a single dose of 4.0 gm. After evaluation of the results, it was apparent that all dosage schemes were effective, but the single dose of 4.0 gm. appeared to be the most effective. The 21 patients given this latter dosage were all cured in 3 to 6 weeks. It was also noted that patients with trichophytin-negative infections responded better to griseofulvin than did those with trichophytin-positive infections. Side effects to the griseofulvin were minimal, but complete blood cell counts and urinalyses should be done periodically.

The usefullness of this antibiotic in the treatment of fungus infections of the scalp is well established. The single dose method is both convenient and less expensive.

A. S. Zelickson
Minneapolis, Minn.

"Tinea Capitis Treated With Griseofulvin." Stritzler, C., Rein, R. L. and Ulku, K.: A. M. A. Arch. of Derm. 85:743, 1962.

OCCULT BREAST CANCER

Brief reference is made to several clinical situations in which metastatic carcinoma in a lymph node may be the presenting symptom of cancer in a distant organ. The main purpose of the article, however, is to review data concerning the management of breast cancers where axillary node metastases represent the first indication. There is some disagreement among various authors in the literature as to whether radical mastectomy should be performed in the absence of a mass in the breast when a thorough study excludes a primary in other parts of the body.

The twenty-one patients which are reviewed were treated during the period 1949 through 1961 at Maimonides Hospital in New York. These patients all had carcinoma first documented by axillary lymph node biopsy. There were fourteen females and seven males. Ten of the females were subjected to ipsilateral mastectomy. Radical mastectomy was performed in nine of the ten patients, the tenth procedure being a simple mastectomy. Primary carcinoma was found in seven of the ten breasts resected. Three of the patients subjected to mastectomy did not have primaries demonstrated by careful serial slicing of the specimen. They, however, all had a uniformly favorable outcome with long survivals. It is, of course, possible that minute lesions may be overlooked. Four patients were not treated by mastectomy. One of these had carcinoma of the pancreas, another had gastric carcinoma, and another had carcinoma of the lung. The fourth, and only surviving patient in the group without breast cancer, had no evidence of primary disease two years following the axillary node biopsy. Of the group of seven male patients, four had carcinoma of the lung, one had gastric carcinoma, one had carcinoma of the transverse colon and the last patient had no evidence of a primary two years after the axillary node biopsy. In this instance it was thought that the lymph nodes were compatible with amelanotic melanoma.

In discussing the data the authors emphasized that breast carcinoma is the most frequent source of axillary lymph node metastases. The histological appearance of metastatic tumor in the axillary nodes does not necessarily resemble that of the primary breast lesion. The authors feel that such patients have at least as favorable a prognosis as other patients with breast cancer in which the lymph nodes are involved. Collective statistics from cases reported in the literature and those of the current article would support this premise, the five year survival rate in such instances being 36%. Another point of some interest is that these tumors are frequently very slow growing.

The proposal that radical mastectomy be performed in women with involved axillary nodes, and with no other demonstrable primary lesion is not new to the medical literature. However, the data presented herein would suggest a more favorable prognosis than was heretofore ordinarily considered for such patients. It is imperative, however, that such individuals be thoroughly screened for possible extra-mammary primary sites of malignancy.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Carcinoma in Axillary Lymph Nodes as an Indicator of Breast Cancer" Feueraman, L.; Attie, J. N.; Rosenberg, B.; S.G.&O., 114:5, January, 1962.

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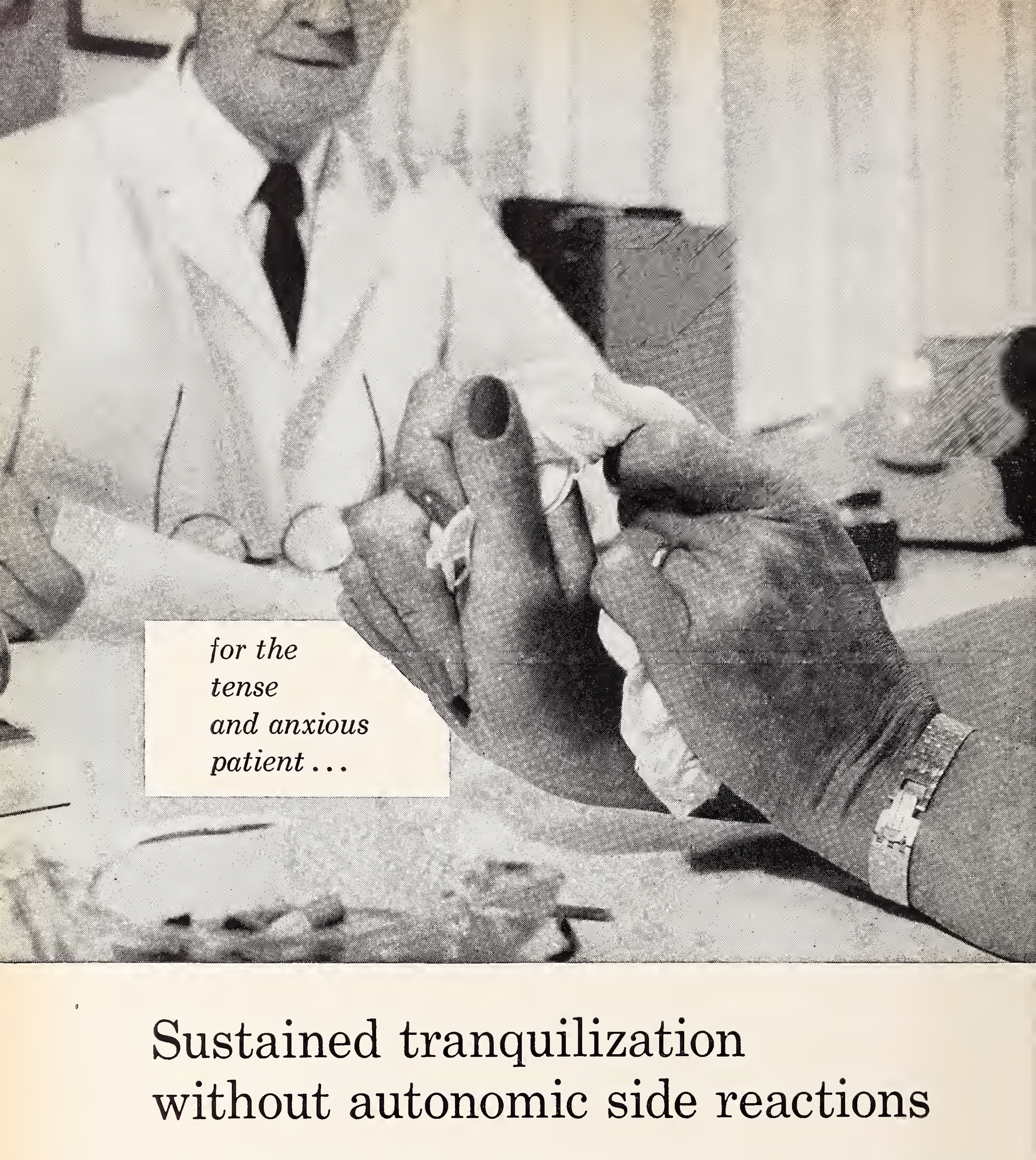

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Book Reviews

EARLY DETECTION AND DIAGNOSIS OF CANCER — O'Donnell, W. E., Day, Emerson and Venet, Louis — C. V. Mosby Company, St. Louis, 1962.

This book of 275 pages represents an excellent handbook on the examination directed toward detection and diagnosis of cancer. One would agree with Dr. John R. Heller's foreword that the attitude of the physician is the most important single element to assure recognition of malignant disease in the early stages.

The authors have compiled experience from the Strang Cancer Prevention Clinic of Memorial Hospital into this useful handbook. The reader will find each disease in separate systems covered in outline form, including the tools and methods of physical and laboratory examination to aid one in examinations specifically directed toward discovery of cancer and pre-malignant lesions.

Even the most experienced physician would undoubtedly find hints and clues to direct his investigations.

This book should be considered an essential to the worktable of every physician involved in examination directed toward diagnosis of malignant disease problems.

J. H. Strickler
Minneapolis, Minn.

A PRIMER OF WATER, ELECTROLYTE, AND ACID BASE SYNDROMES, Emanuel Goldberger, M. D. Lea & Febiger, Philadelphia. 353 pages. $6.00.

This monograph deals with the water, electrolyte, and acid-base balances as syndrome. The water loss syndrome, for example, is a matter of pure dehydration and results from conditions which make water unavailable to the body. This may include the inability of the kidney to concentrate water normally; it may occur in diarrhea; or it may occur from excess loss of water through the skin, such as occurs in burns when adequate water is not ingested. The laboratory findings, the treatment, and the clinical symptoms are well described.

The other syndromes, the sodium loss syndrome, the sodium excess syndrome, and the syndromes produced by the disturbance in the acid-base balance are well defined and the treatment is outlined.

This book should be an excellent reference for any physician who is interested in studying or reviewing these interesting physiologic processes. It can be used as a reference in those instances in which one of these problems is encountered in clinical practice.

Carl O. Rice, M.D.
Minneapolis, Minnesota

RADIOACTIVE ISOTOPES IN MEDICINE AND BIOLOGY-MEDICINE, Solomon, Silver, M. D., Publisher: Lea & Febiger, 1962, pp. 311, Price $8.00.

This book represents a revision and expansion of Dr. Silver's contribution in a previous volume "Radioactive Isotopes in Clinical Practice," by Quimby, Feitelberg & Silver. The basic physics of isotopes is omitted from this book and covered in a companion volume by Quimby & Feitelberg.

Over half the book is devoted to the use of I^{131} for diagnosis and treatment of thyroid disease. Thyroid physiology is discussed extensively in the opening chapter on diagnostic tests of thyroid function. Another long chapter is devoted to the treatment of hyperthyroidism with I^{131}. These excellent sections reflect the author's own specialized interest and his large experience. He reports a permanent myxedema incidence in 1280 treated patients of 7.1% in males and 8.3% in females. The question of which cases should be treated with I^{131} is discussed, and the author's view will evoke some argument from surgeons. Apparently Dr. Silver now treats any adult with uncomplicated hyperthyroidism with I^{131} regardless of age with the exception of the pregnant or lactating female.

The rest of the book is a series of short discussions on the various isotopic proceedures now in clinical use. The chapter on the Schilling Test is not as complete as this widely used technique should merit, nor is the discussion on the radio renogram.

In general, the book is a good reference for the average clinical user of isotopes, and for those who wish to obtain a perspective in the use of I^{131} for thyroid disease.

Wm. A. Wilcox, M. D.
Minneapolis, Minn.

WE HEAR YOU'RE COMING TO OUR HOSPITAL
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Minneapolis, Minnesota Price-30c

This is an interesting little booklet with line drawings geared to relieve the apprehensions of a small child who may be entering the hospital. It describes in a child's language the things which might otherwise appear mysterious. It could be used as a color book. This book could be individualized by having the hospital's name printed on the cover.

Carl O. Rice, M. D.
Minneapolis, Minn.

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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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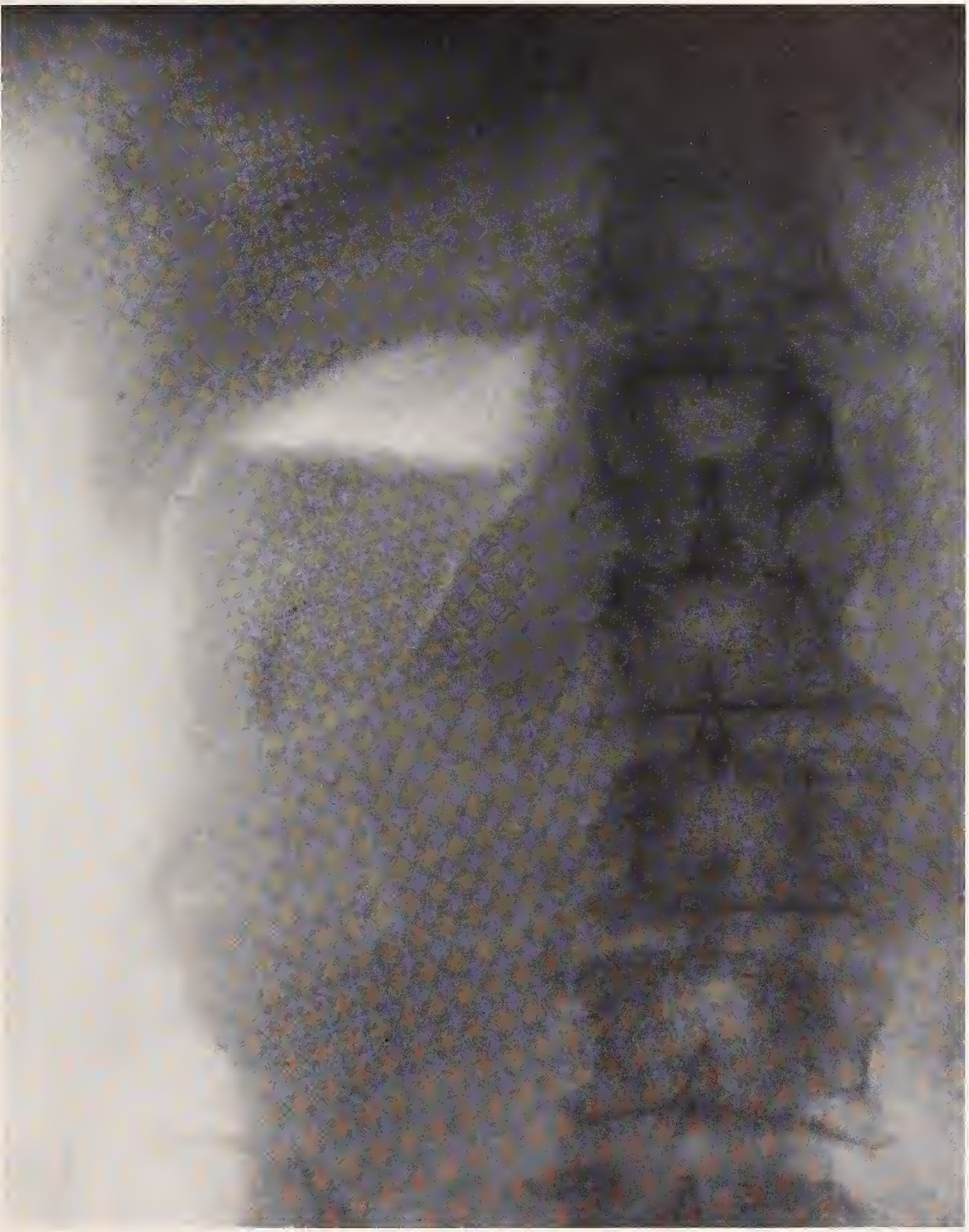

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1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

For prescribing information, please see *PDR* or available literature.

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Curbstone Consultation

QUESTION: A number of articles have appeared recently recommending the use of large doses of antibiotics, rather than tetanus anti-toxin, as tetanus prophylaxis in cases of contaminated wounds, for individuals who have not had recent active immunization. Please comment on the medical and legal aspects of this approach.

M. D. Minneapolis

ANSWER: It is unfortunate that the problem of tetanus prophylaxis in the non-immunized individual still exists. As the World War II experience has shown, tetanus is a completely preventable disease in properly immunized subjects. While it is true that tetanus anti-toxin may cause serum sickness in a certain percentage of individuals, the establishment of adequate circulating levels of antitoxin is the only means of neutralizing circulating tetanus toxin. Clostridia tetanus is sensitive to penicillin, but characteristically grows in necrotic tissue, which antibiotics penetrate poorly. Adequate surgical debridement is not always carried out, especially in the small surface wound with inapparent foreign matter in the deeper tissues. In addition, antibiotics are not in themselves innocuous in terms of hypersensitivity reactions. It is the writer's opinion that tetanus anti-toxin remains the primary drug approach to tetanus phophylaxis in the non-immunized individual. If the skin test indicates sensitivity, then desensitization must be carried out. Should allergic symptoms appear, antihistamines, or adrenal steroids if necessary, may be administered.

Since the use of tetanus anti-toxin is well-established in the medical community, legal liability may arise for the physician who fails to use it in the non-immunized patient with a contaminated wound.

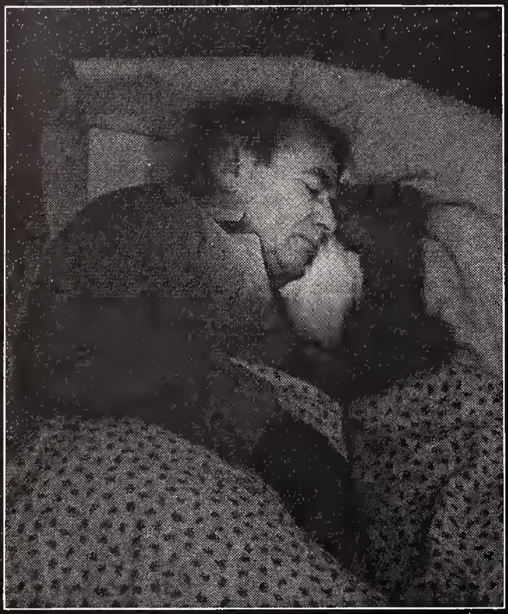
A plea is again made for routine active tetanus immunization of all individuals. This not only confers continuing protection, but allows the use of a booster injection of toxoid should the patient sustain a contaminated wound.

QUESTION: What are the indications for splenectomy in Hodgkin's disease?

M. D. Madison

ANSWER: Splenectomy has been employed sucessfully in those patients with Hodgkin's disease who develop hemolytic anemia and/or thrombocytopenic purpura. Adrenal steroids also give good results, and are preferred by most hematologists. A major surgical procedure such as splenectomy is often tolerated poorly by patients with lymphoma, and attacks only one part of a hypertrophied reticulo-endothelial system. In patients who become refractory to steroids, splenectomy may be advised. A spleen which is troublesome only because of size is better treated by irradiation or chemotherapy.

You are invited to send your questions to Curbstone Consultation Section of Minnesota Medicine, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota Your name and address will be withheld. Answers will be given anonymously but the author's name will be provided if additional details are desired.



Thanks to 135 tiny "doses" throughout the

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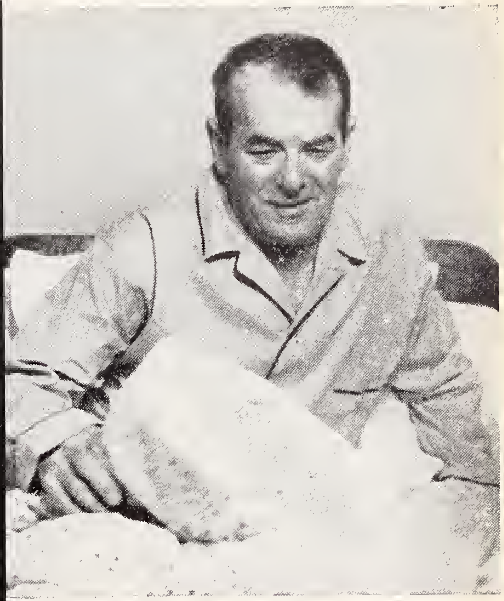

ight, the arthritic wakes up comfortable

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CAUTIONS: Should be used with caution in patients hypersensitive to sympathomimetic compounds; in cases of coronary or cardiovascular disease; and in the presence of severe hypertension.

CONTRAINDICATIONS: Hyperexcitability; agitated pre-psychotic states.

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Special Article

ALEX BARNO, M.D.
D. W. FREEMAN, M.D.
M. P. BAKEN, JR., M.D.
Minneapolis 16, Minnesota

Two Decades of Progress

Minnesota Maternal Mortality Study*

Part II

Minnesota has a remarkable record in reduction of maternal mortality during the past two decades. The authors present a detailed analysis of this prolonged effort in our state, and the data and conclusions will be of great interest to all physicians who handle maternity cases. A timely summary report.

Table 5 lists these causes according to frequency, with trauma being the leading cause. Of these 33 trauma deaths, 17, or 52 per cent, were due to automobile accidents, nine, or 27 per cent, were suicides (nonpregnancy-associated, with evidence of mental aberrations before pregnancy) four, or 12 per cent were homicides; two resulted from accidental drowning and one from burns. One wonders how many of the automobile accident deaths could have been prevented had seat belts been used.

Poliomyelitis accounted for 25 of these deaths, twenty-one of these occurring in the first four years of the study (1950 through 1953). There were no poliomyelitis deaths in 1954 and 1955. The vaccine first became available for school children in the fall of 1955 and for obstetrical patients in 1956. There was one acute poliomyelitis death in 1956 (the patient had had no vaccine); there were two acute cases in 1957 (neither patient had had the vaccine); and one death occurred in 1958 as a result of respiratory paralysis and failure at 18 weeks' gestation in a patient who had had her acute attack seven years previously. It seems that the vaccine should eradicate this cause of death if patients would avail themselves of it.

TABLE 5. NONOBSTETRIC CAUSES OF DEATH, 1950 - 1959

Cause	No.
Trauma	33
Poliomyelitis	25
Malignant tumors	23
Intracranial hemorrhage	23
Not determinable	16
Asian flu	16
Peritonitis	11
Leukemia	6
Infectious hepatitis	5
Coronary occlusion	4
Glomerulonephritis	4
Pneumonia (lobar, virus, and varicella)	4
Pyelonephritis	2
Acute alcoholism	2
Panmyelophthisis	2
Meningitis	2
Lupus erythematosus	2
Spontaneous hemothorax	1
Insulin coma	1
Obstructed laryngo-tracheitis	1
Ruptured aneurysm of splenic artery	1
Hemorrhage from liver abscess	1
Acute rheumatic fever	1
Shock of undetermined origin	1
Bilateral spontaneous pneumothorax	1
Hypersplenism	1
Pulmonary tuberculosis	1
Obstruction of trachea	1
Thrombocytopenic purpura	1
Brain abscess	1
Status asthmaticus	1
Status epilepticus	1
Spontaneous rupture of thoracic aorta	1
Dissecting aneurysm of aorta	1
Acute cerebral edema	1
Pulmonary aspiration of stomach contents	1
Tetanus	1
Cirrhosis of liver	1
Acute pulmonary edema	1
Infarction of GI tract	1
TOTAL	203

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TABLE 6. PREVENTABILITY AND RESPONSIBILITY FOR DEATH. 1950 - 1959

	No.	%
Preventable	118	24
Physician responsibility (101)*		
Patent (11)		
Hospital laboratory (2)		
Nurse-anesthetist (2)		
Hospital administration (1)		
Midwife (1)		
Not Preventable	372	75
Disease responsibility (372)		
Not Determinable	3	1
TOTAL	493	100

*86% of preventable deaths

The remaining categories are self-explanatory. The 23 patients in the intracranial hemorrhage group had no hypertensive vascular disease but expired from ruptured intracranial aneurysms. Asian influenza was the leading cause of death in 1957, with 11 deaths occurring in that year. The five other Asian influenze deaths occurred in 1959. This subject has been discussed in detail in a previous publication[6] but it is well to reemphasize several points. Fifty per cent of the deaths from Asian influenza in Minnesota among women of the childbearing age occurred in pregnant women. The deaths associated with pregnancy were all characterized by fulminating and overwhelming edematous pneumonia with respiratory insufficiency as the immediate cause of death. This is in contrast with deaths due to influenza reported in nonpregnant individuals where secondary bacterial infections account for a large proportion. Partial protection against influenza is afforded by presently available vaccine, and there is reason to hope for the development of more completely effective preparations in the future. It is interesting to note that no influenza vaccine had been given to the 16 patients reported in this paper. The Public Health Service Advisory Committee on Influenza Research[12] has strongly recommended routine influenza immunization of pregnant women during the influenza season (October through March).

Preventability and Responsibility for Deaths

This aspect of the study is shown in Table 6. Of the 101 deaths assessed to physician responsibility by the Committee, it is most gratifying to report that about three-fourths (72 per cent) of these occurred during the first five years of the current study and only one-fourth (28 per cent) during the last five years, even though there have been 28,064 more live births during the second five-year period. Again this indicates the progress attained by the physicians in the state. Comparing physician responsibility in 1941 (70 per cent of the total maternal deaths were assessed to physician responsibility) with the presently available figures, it is seen that during the last three years of the study, these percentages dropped to 10, 4 and 14 per cent respectively.

Consultation

Table 7 shows the improvement in obtaining consultation as the years of the study progressed. During the first year of the study (1950), 50 per cent of the maternal deaths had no consultation when indicated, or had inadequate consultation, whereas the percentage has been as low as 15 during the last five years. This more liberal use of consultation certainly has been a factor in the improvement of the maternal mortality rates.

Rh, Wasserman and Pelvic Measurements

The value of these procedures during the prenatal period is obvious to all, and Table 8 documents the improvement during the 10 years of the current study. Registered patients were those who came to the physicians for prenatal care. The improvement was appreciable for Rh and pelvic measurements but less for the obtaining of blood serology for syphilis.

TABLE 7. CONSULTATIONS, IN PERCENT, 1950 - 1959

	'50	'51	'52	'53	'54	'55	'56	'57	'58	'59
None										
Not indicated	18	25	24	22	28	26	24	28	12	19
Indicated	25)	25)	14)	10)	15)	12)	9)	2)	12)	16)
	)50	)46	)24	)22	)28	)24	)16	)15	)16	)27
Inadequate	25)	21)	10)	12)	13)	12)	7)	13)	4)	11)
Adequate	32	30	52	56	45	51	60	57	73	54

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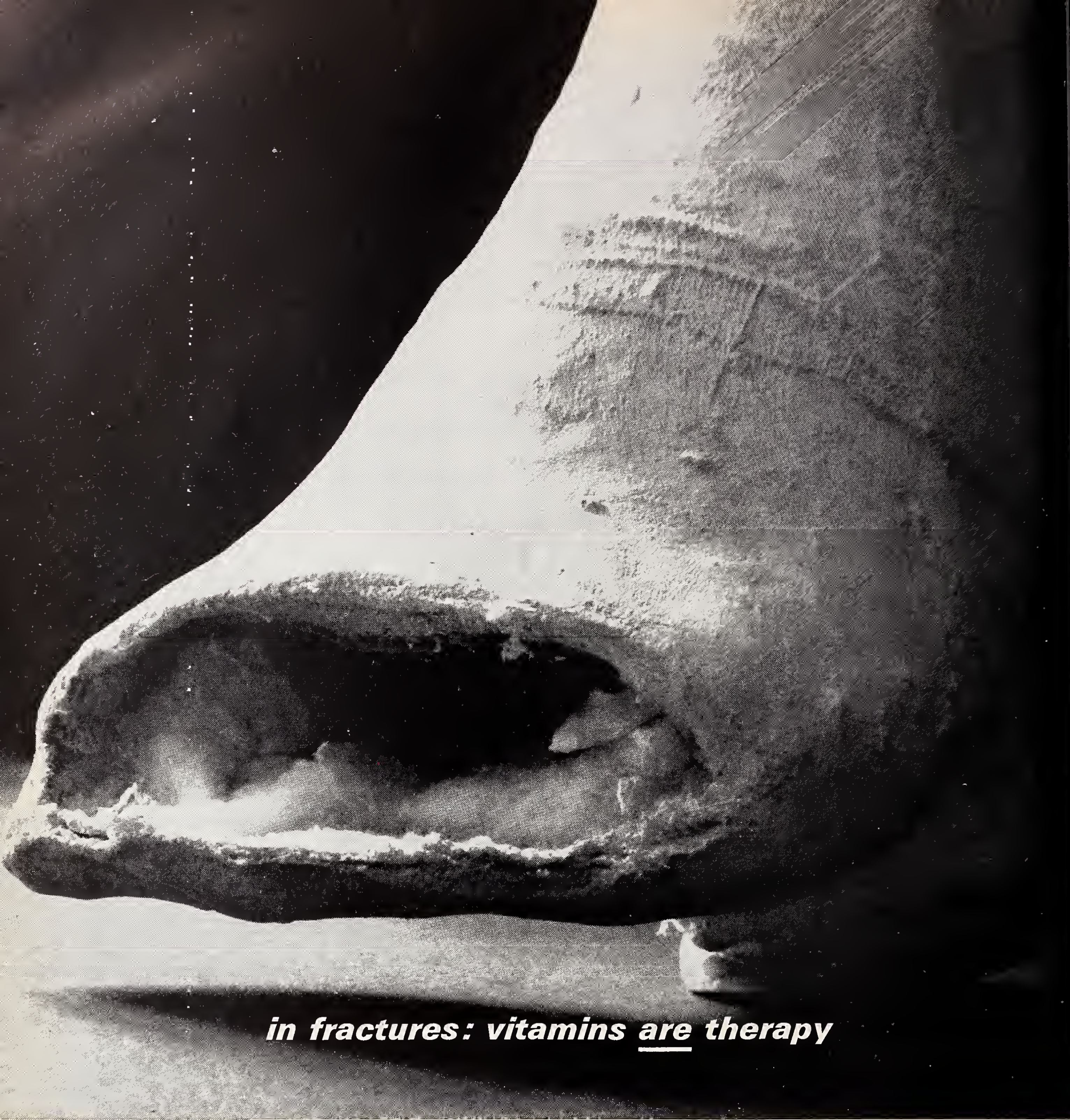

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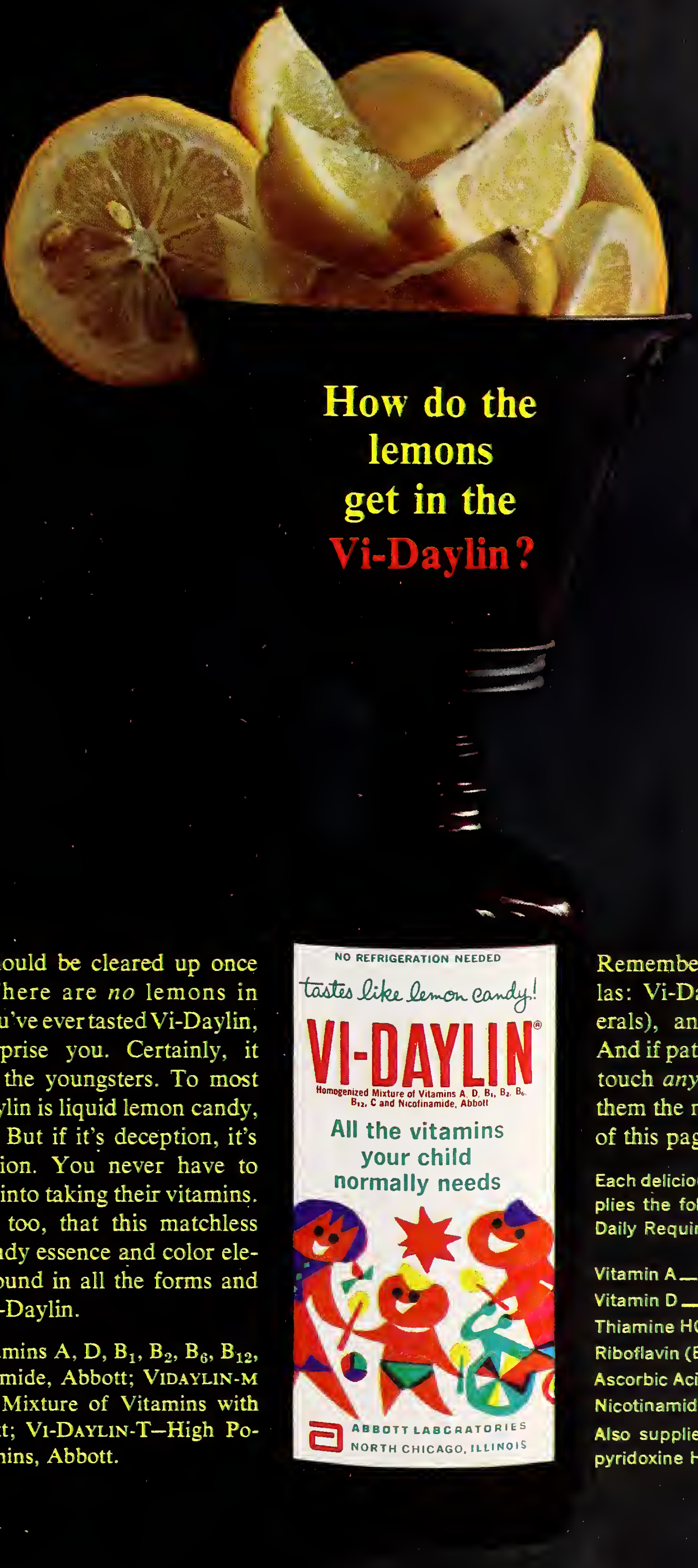
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TABLE 8. RH, WASS., AND PELVIC MEASUREMENTS OBTAINED PRENATALLY, PERCENT OF REGISTERED PATIENTS, 1950 - 1959

Year	Rh	Wass.	Pelvic Measurements
1950	45	39	36
1951	36	43	27
1952	63	57	46
1953	60	56	44
1954	82	67	42
1955	90	48	39
1956	88	61	58
1957	90	73	55
1958	67	39	61
1959	77	50	54

Maternal Death Certificates

Table 9 analyzes the improvement in the completion of the death certificates by the physicians. The accuracy of the data supplied by the Bureau of Vital Statistics is based on the accuracy of the information in this vital document. In 1950 only 22 per cent of the death certificates were complete and correct, whereas in the last two years of the study, these figures were 81 per cent and 62 per cent respectively.

TABLE 9. ANALYSIS OF MATERNAL DEATH CERTIFICATES, IN PERCENT, 1950 - 1959

	'50	'51	'52	'53	'54	'55	'56	'57	'58	'59
Complete, correct	22	32	41	37	53	61	51	57	81	62
Complete, incorrect	10	14	21	20	35	7	11	10	12	5
Incomplete, correct	40	23	28	27	8	23	33	27	8	27
Incomplete, incorrect	28	32	10	15	5	9	4	7	0	5

Autopsies

The accuracy of assessment of death by the Maternal Mortality Committee is greatly enhanced by autopsy material. Table 10 shows the marked improvement in this area. In 1950 only about one-third of the maternal deaths had autopsies, whereas during the past five years this has varied from two-thirds to three-fourths. The State Department of Health has been of great assistance by helping in the procurement of pathologists for the autopsies and subsidizing the cost.

Summary

During the past two decades the birth rate in Minnesota has increased by 59 per cent, yet the total maternal deaths from all causes have decreased by two-thirds. The gross maternal mortality has decreased by three-fourths. The obstetric deaths (those where pregnancy played a causative role) also have decreased by three-fourths. The corrected maternal mortality rate (considering only the obstetric causes of death) has decreased by 85 percent. More important, the deaths considered preventable by the Maternal Mortality Committee have decreased by 90 per cent. The maternal mortality rate during the last several years has been 0.1 to 0.2 per 1,000 live births. All will agree that this is tremendous progress of which Minnesota physicians can be justly proud. The factors responsible for this improvement are discussed; but as McKelvey[11] states in an editorial in Minnesota Medicine, the general practitioners deserve most of the credit for this progress, since they care for the majority of pregnant patients. There is justification here for pride but not for complacency. Some credit is also due the Minnesota Maternal Mortality Committee for its educational program of published reports and discussions at County Medical Society meetings, hospital staff meetings, seminars, etc.

TABLE 10. AUTOPSIES, IN PERCENT, 1950 - 1959

	'50	'51	'52	'53	'54	'55	'56	'57	'58	'59
Obtained	38	46	43	51	67	79	69	72	69	81
Refused	19	19	21	15	10	9	7	10	4	5
Not Requested	43	35	36	34	23	11	24	18	27	14

The obstetric and nonobstetric causes of death are discussed with special emphasis on hemorrhage, which constitutes 46 per cent of the preventable obstetrical deaths. The Asian influenza deaths in the nonobstetric category have also been emphasized. The Public Health Service Advisory Committee on Influenza Research [12] has strongly recommended routine influenza immunization of pregnant women during the influenza season (October through March). Of the deaths assessed to physician responsibility, three-fourths occurred during the first five years of the current study (1950-1954), and only one-fourth during the last five years (1955-1959), even though there have been 28,064 more live births during the second five-year period. Two decades ago (1941) 70 per cent of the total maternal deaths were assessed to physician responsibility whereas during the last three years, these percentages are down to 10, 4 and 14 respectively. The marked improvement in the obtaining of consultation, Rh factor, Wassermann, pelvic measurements and autopsies is discussed, as is the more accurate completion of the death certificate.

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Board of Medical Examiners

DULUTH ABORTIONIST SENTENCED

Re: State of Minnesota vs. Blanche Ziegenbein

On June 19, 1962 Blanche Ziegenbein, 57, 1120 West First St., Duluth, Minnesota entered a plea of guilty before the Hon. Victor H. Johnson, Judge of the District Court of St. Louis County, to an information charging her with the crime of abortion, whereupon the Court sentenced her to a term of not to exceed four years in the State Reformatory for Women at Shakopee, Minnesota. However, Judge Johnson then stayed the execution of the sentence and placed the defendant on probation for a period of two years. One of the conditions of probation ordered by the Court permitted the defendant to make arrangements to travel to California, where she will reside with a daughter. Mrs. Ziegenbein will then be under the supervision of the California authorities for the two-year probationary period, in accordance with the provisions of the interstate compact relating to probation.

The defendant was arrested after a long and intensive investigation by a number of law enforcement agencies, in addition to the Minnesota State Board of Medical Examiners, including the St. Paul and Duluth Police Departments, the St. Louis County Attorney's office and the Minnesota Bureau of Criminal Apprehension. The investigation was begun in the latter part of January, 1962 after a report was received by the Board that a St. Paul divorcee had been admitted as a patient to Ancker Hospital in St. Paul suffering from the after-effects of an induced abortion.

A number of interviews with the abortion victim, aided by independent investigation by the above named agencies between interviews, indicated the facts of the case to be as follows: In the summer of 1961 the divorcee and a friend had been drinking in several Duluth taverns and after becoming ill in one of them she went to the rest room where the defendant, with whom she was not acquainted, engaged her in conversation. Mrs. Ziegenbein, after learning that the woman was ill, inquired as to whether or not she was pregnant and when the answer was in the negative the defendant volunteered the information that she was "in that line of business," whereupon she furnished a Duluth telephone number with instructions to ask for "Blanche." The divorcee wrote down the name and telephone number and in January, 1962, at which time she had been pregnant for three months, made arrangements by telephone from St. Paul to have an abortion performed. On January 12th, 1962 she drove her car to 1102 West First Street in Duluth where the defendant, after being paid $100 in currency, inserted a catheter. The patient then drove back to St. Paul on the same day and noticed no change in her condition until January 26th when she expelled the fetus at her home, being subsequently hospitalized on the same day at Ancker Hospital.

Mrs. Ziegenbein, who attempted to convey the impression that she was a nurse, has no medical training and has been employed in the past as a maid. She was born in Iowa on April 1st, 1905 and holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secy.

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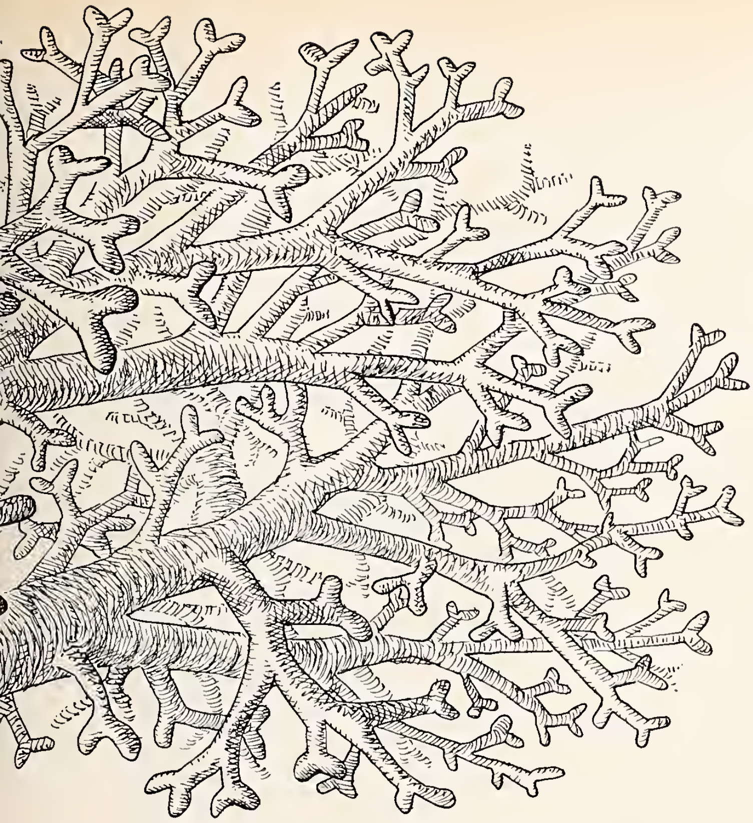

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American Medical Association Actions Reported

Health care for the aged, medical discipline, composition of the AMA Board of Trustees, a study of the American Board of Abdominal Surgery, relations with the American College of Surgeons and voluntary health insurance were among the major subjects acted upon by the House of Delegates at the American Medical Association's 111th Annual Meeting held June 24-28 in Chicago.

Dr. Edward R. Annis, of Miami, Florida, chairman of the AMA National Speakers Bureau and well known spokesman in the campaign against the King-Anderson Bill, was chosen president-elect of the association. Dr. Annis will become president at the June, 1963, annual meeting in Atlantic City, succeeding Dr. George M. Fister of Ogden, Utah, who assumed office at the June 26 inaugural ceremony in Chicago.

Final registration figures at the meeting reached a total of 42,643, including 14,092 physicians.

Health Care For The Aged

The House received 17 resolutions expressing full support of the Kerr-Mills program and firm opposition to the King-Anderson type of legislation. In reaffirming the position of active opposition to the King-Anderson Bill, the House cited the following reasons:

"1) the lack of need for such a plan.
"2) that it would provide inadequate care for all aged rather than complete care for those who need help.
"3) the fact that inherent in the use of the Social Security mechanism are governmental controls of medical practice which would increase with the expansion of the program.
"4) deterioration of the quality of medical care not only for the aged but for the population as a whole."

In reaffirming strong support for the Kerr-Mills Act, the House declared that "the Kerr-Mills method should be given a fair and reasonable chance to meet and thus remove the demand for further Federal legislation."

It urged that in states where existing programs indicate a need for a Kerr-Mills implementing law, each state association should actively sponsor and promote with other responsible citizens the enactment of such a law. It also urged the state associations to "work actively with other responsible citizens in reviewing the functions of the law, evaluating its effectiveness and aggressively supporting improvements in programs to aid those aged who need help so as to achieve the provision of quality medical care and service."

The House took no action on one resolution which called for non-participation in the imple-

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mentation of the King-Anderson Bill, but it urged individual physicians to give particular consideration to the following sections of the Principles of Medical Ethics:

"Section 1. — The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

"Section 5. — A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

"Section 6. — A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioriation of the quality of medical care."

Commenting on the Association's fight against the King-Anderson Bill, Dr. Leonard W. Larson, retiring president, told the opening session of the House that "this great struggle has been testing again whether the science and art of medicine will be permitted to grow and flourish in freedom, or whether progress in medicine will be stunted and shriveled by the excesses of government control."

He declared that the steadfast refusal of the AMA to compromise on basic principles "has been a source of strength for us and our friends." Dr. Larson expressed confidence in ultimate victory, but he added that victory will impose a solemn obligation of responsible leadership for all physicians.

Also commenting on the question of compromise, Dr. Fister in his inaugural address said "we will not compromise with those who regard medical care problems as simply playthings in the game of politics — gimmicks to attract the votes of the gullible."

Medical Discipline

To implement one of the major recommendations made by the Medical Disciplinary Committee at the June, 1961, meeting in New York, the House approved a change in the Bylaws under which a proposed Section 1 (B) of Chapter IV will now read:

"In addition to such disciplinary action as may be taken under the constitution and bylaws of the component society and constituent association to which the Member belongs, or when a state medical association to which a Member belongs requests the AMA to take disciplinary action, or when at the request of the American Medical Association the state association to which the member belongs consents to disciplinary proceedings by AMA, the Judicial Council, after due notice and hearing, may censure him, or may suspend or expel any member of the American Medical Association from AMA membership only for an infraction of the Constitution or these Bylaws or for a violation of the Principles of Medical Ethics."

AMA Board of Trustees

The House approved a report of the Ad Hoc Committee on the Board of Trustees which recommended that the size of the Board be increased from 11 members to 15 members. This will be accomplished by adding three elected members and by including the immediate past president of the Association for a one-year term. The House also accepted a committee recommendation that set the term of office for elected Board members at three years and limited the number of terms to three, for a maximum total of nine years service.

To implement the House action, the Council on Constitution and Bylaws submitted changes in the Constitution and Bylaws for consideration at the 1962 Clinical Meeting.

American Board of Abdominal Surgery

A study report from the Council on Medical Education and Hospitals, recommending that recognition should not be granted to the American Board of Abdominal Surgery as a specialty board, was approved by the House. In accepting the Council report, the House also declared its disapproval in principle of establishing specialties which are based largely or wholly on an arbitrarily defined anatomical region of the body.

The study, which was carried out under in-

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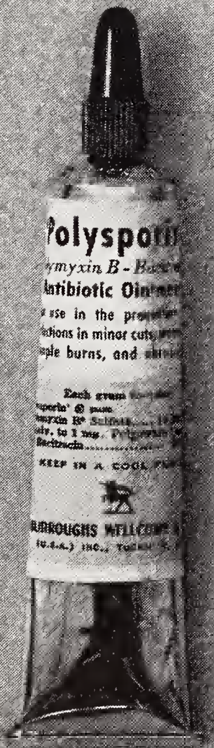
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structions from the House of Delegates at the 1961 Clinical Meeting, concluded that the present contribution of the American Board of Abdominal Surgery to the advancement of surgery and the betterment of public health is inadequate in many important respects. It also concluded that the American Board of Abdominal Surgery does not offer significant potential for the advancement of surgery and the betterment of public health.

American College of Surgeons

In considering a Board report and four resolutions involving surgical assistants and relations between the AMA and the American College of Surgeons, the House declared that the adoption and interpretation of the Principles of Medical Ethics is the prerogative and duty of the American Medical Association. It also restated the Association's June, 1961, policy statement in the following manner:

"(1) Each member of the AMA is expected to observe the Principles of Medical Ethics in every aspect of his professional practice.

"(2) Each doctor engaged in the care of the patient is entitled to compensation commensurate with the value of the services he has personally rendered.

"(3) No doctor should bill or be paid for a service which he does not perform; mere referral does not constitute a professional service for which a professional charge should be made or for which a fee may be ethically paid or received.

"(4) When services are rendered by more than one physician, each physician should submit his own bill to the patient and be compensated separately whenever possible.

"(5) It is ethically permissible in certain circumstances, however, for a surgeon to engage other physicians to assist him in the performance of a surgical procedure and to pay a reasonable amount for such assistance. This principle applies whether or not an assisting physician is the referring doctor."

Voluntary Health Insurance

In accepting a Council on Medical Service report on the utilization of state and federal tax funds to provide voluntary prepayment health insurance protection to assist the aged in meeting the costs of health care services, the House approved the following policy statement:

"1. The need for application of the prepayment or insurance principle to protect our people against the costs of medical care is fully recognized and applies to all ages rather than to the aged alone.

"2. Persons financially able to prepay their own expenses are expected to do so and must be encouraged rather than compelled to do so.

"3. Persons financially unable to prepay adequately their expenses may properly be assisted to the degree necessary by their families, their communities, their states, and if these fail, by the Federal Government — but only in conjunction with other levels of government.

"4. The prepayment system should be devoid of government controls.

"5. Dignity and self-sufficiency for the individual should be upheld.

"6. The protection offered must be reasonable and comprehensive rather than token in character."

The House recommended that the Board of Trustees and the Council on Medical Service explore all possibilities, using these principles as a basis.

Miscellaneous Actions

In considering reports and resolutions on a wide variety of subjects, the House also:

Learned that the Board of Trustees has instructed the Council on Drugs to conduct a study on the relationship between *tobacco and disease.*

Disapproved a suggestion that the Council on Medical Education and Hospitals be replaced by *two separate councils* on undergraduate and graduate medical education.

Referred to the Board of Trustees a proposal that at least six members of the *Council on Medical Education and Hospitals* shall be engaged primarily in the private practice of medicine in hospitals without a medical school affiliation and that no more than four members may be salaried personnel of a medical school or university.

Approved a resolution that *honorariums* be provided for the Association's elected officers in amounts to be determined by the Board of Trustees.

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Adopted an AMA Statement of Principles on *Mental Health* and urged all constituent associations to lend active support to the First National Congress for Mental Illness and Health, to be held in Chicago in October.

Endorsed a resolution on *employment of the handicapped,* stating that each individual candidate for employment should be evaluated in the light of his ability to perform useful work.

Approved a Guide to the Organization and Operation of *Airport Medical Services* submitted by the Council on Occupational Health.

Endorsed the joint statement on *narcotic addiction* by the AMA and the National Research Council of the National Academy of Sciences.

Urged automobile manufacturers to make *seat belts,* approved by the Society of Automotive Engineers, standard equipment on all automobiles.

Approved a recommendation that *AMA meetings* be scheduled as follows: Annual Meetings—1966, Chicago; 1967, Atlantic City, and 1968, San Francisco, and Clinical Meetings — 1965, Philadelphia, and 1966, Las Vegas.

Recommended that the Council on Medical Education and Hospitals conduct a study of *specialty residencies.*

Reaffirmed its opposition to *compulsory coverage of physicians* under the Social Security Act, after receiving 11 resolutions opposing coverage and only two favoring the inclusion of physicians.

Accepted the report of the *Committee on Communications* as information, and, is considering the committee recommendations, suggested that the Executive Vice President present a report of Association activities to the House at each meeting.

Opening Session

At the Monday morning session, the AMA presented a special citation to Jackie Cooper, star of television, stage and movies, for his portrayal of a Navy doctor in the "Hennessey" television program. The 1962 Joseph Goldberger Award in clinical nutrition was presented to Doctor Edwards Albert Park of Baltimore for his investigation of rickets and scurvy in children. Dr. Larson received a plaque for his work on the medical advisory board of the Sears-Roebuck Foundation. The American Medical Association was given awards of appreciation from the Cuban Medical Association in Exile and the Girl Scouts of America.

Inaugural Ceremony

Dr. Fister, in his inaugural address, declared that "we will cooperate, to our very utmost, with government officials, legislators and all Americans who are sincerely interested in finding sound, practical solutions to medical care problems — solutions which include both a respect for medical standards and a respect for the tax payers."

The Distinguished Service Award was presented to Doctor Russell L. Cecil, and Donald D. Van Slyke, Ph.D., research chemist at the Brookhaven National Laboratories, received the first AMA Scientific Achievement Award honoring outstanding contributions to medicine by non-physician scientists.

Mrs. George Papanicolaou was given a special award honoring her late husband's service to mankind.

Wednesday Session

Dr. Fister, in his Wednesday address, assured the House of Delegates, all AMA members and the citizens of this country that "during the next year there will be no letup in our campaign to preserve the high standards of our voluntary, free choice, medical care system." He said that no organization, especially one which thrives on challenge and opportunity to serve the public, can be static.

Election of Officers

In addition to Dr. Annis, the new president-elect, the following officers were named at the closing session on Thursday:

Dr. J. P. Culpepper, Jr., Hattiesburg, Miss., vice president; Dr. Norman A. Welch, Boston, re-elected speaker of the House, and Dr. Milford O. Rouse, Dallas, Tex., re-elected vice speaker.

Dr. Charles L. Hudson, Cleveland, Ohio, and Dr. Wesley W. Hall, Reno, Nev., were re-elected to five-year terms on the Board of Trustees. Dr. Elmer G. Shelley, North East, Pa., was renamed to the Judicial Council.

Re-elected to the Council on Medical Education and Hospitals were: Dr. Warde B. Allan, Baltimore, and Dr. W. Clarke Wescoe, Lawrence, Kansas.

Dr. George W. Slagle, Battle Creek, Mich., was elected to the Council on Medical Service, succeeding Dr. Robert L. Novy, Detroit, who was ineligible for re-election.

End

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Medical Economics

DINNER SPEAKER CHARGES PRESIDENT KENNEDY WITH MISLEADING THE PUBLIC

President John F. Kennedy was charged with misleading the American public by William De Mougeot, Ph. D., director of debate and forensics at North Texas State University, Denton, Texas. De Mougeot made the charge while speaking at the New Members, Officers and Delegates dinner, Sunday, May 20.

Dr. De Mougeot pointed out that the President had two basic flaws in his arguments for the King-Anderson Bill. Kennedy did not mention what health care is now available for the elderly who cannot afford to pay for their care. He said, "It is bad propaganda for the President to advocate a new health care program when he did not prove that a problem exists or that it is not being solved."

"Specifically," said Dr. De Mougeot, "the President did not mention that the Kerr-Mills Bill is already law and will help solve the health care problem for the elderly." The debate coach also noted that no mention of the fact that over 50 per cent of the senior citizens have private health insurance; that doctors provide endless dollars of free health care to the elderly and that there is a national Blue Shield program to provide doctor care to all citizens over 65 for $3.00 per month."

"The second flaw in Kennedy's approach," said Dr. De Mougeot, "was that the President paid no attention to the true economic condition of the senior citizens."

He charged that President Kennedy implied that all the elderly needed federal care to pay for their health bills. Dr. De Mougeot stated that the President did not mention the fact that most persons over 65 have incomes and assets to meet their medical bills, that 45 per cent have assets over $10,000, and that most of the elderly own their own home, and they are free of mortgages.

According to him, the President admitted that the King-Anderson Bill would do far less for the aged than its sponsors have claimed when he declared that the Bill does not solve all of the problems in this area.

"This," he said, "substantiates what the medical profession has been pointing out all along—namely that the King-Anderson Bill would cover less than 25 per cent for the health care needs of our senior citizens.

"This proves the medical profession's position that the sponsors of the King-Anderson Bill are willfully misleading the people when they imply that enactment of this bill into law would solve the medical problems of the elderly."

The President, addressing people mainly over 65, said, "No one in this hall is asking something for nothing." Dr. De Mougeot noted that most of those assembled at the New York rally, along with the 14½ million others, would receive benefits under the King-Anderson Bill despite the fact that they never paid one cent earmarked for such benefits.

The Texas college professor called upon the doctors and their wives to write to their congressmen, speak to their friends, and let the people really know that the King-Anderson Bill is bad medicine. He said the doctors can be proud of the fact that they are for the Kerr-Mills Bill, a program to provide complete health care for all persons who need it.

End

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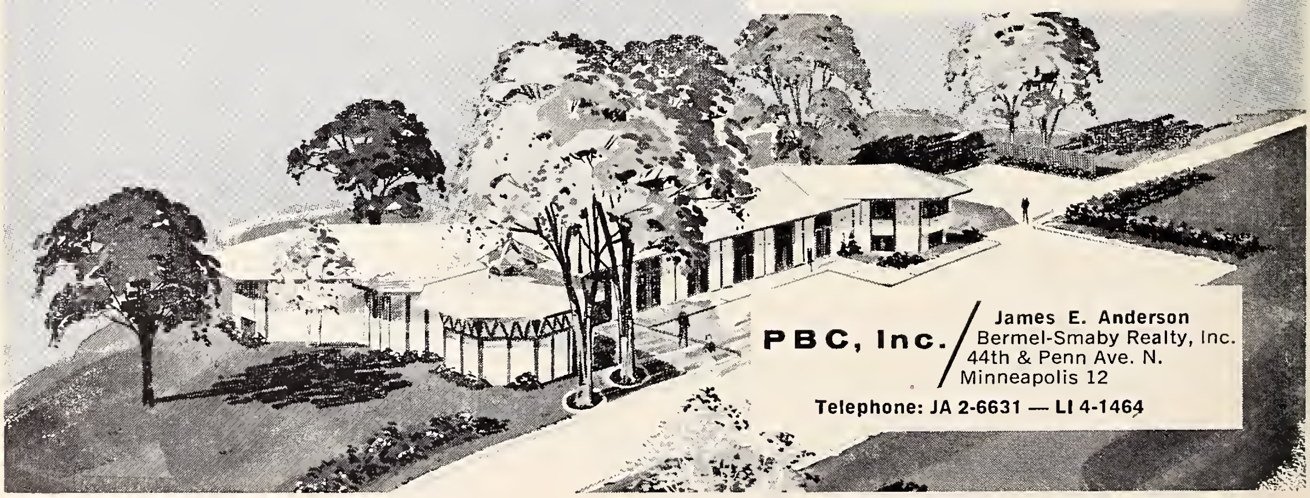

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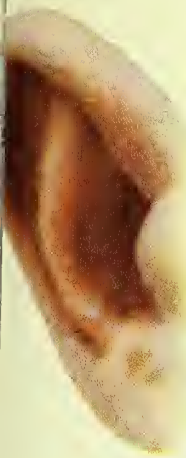

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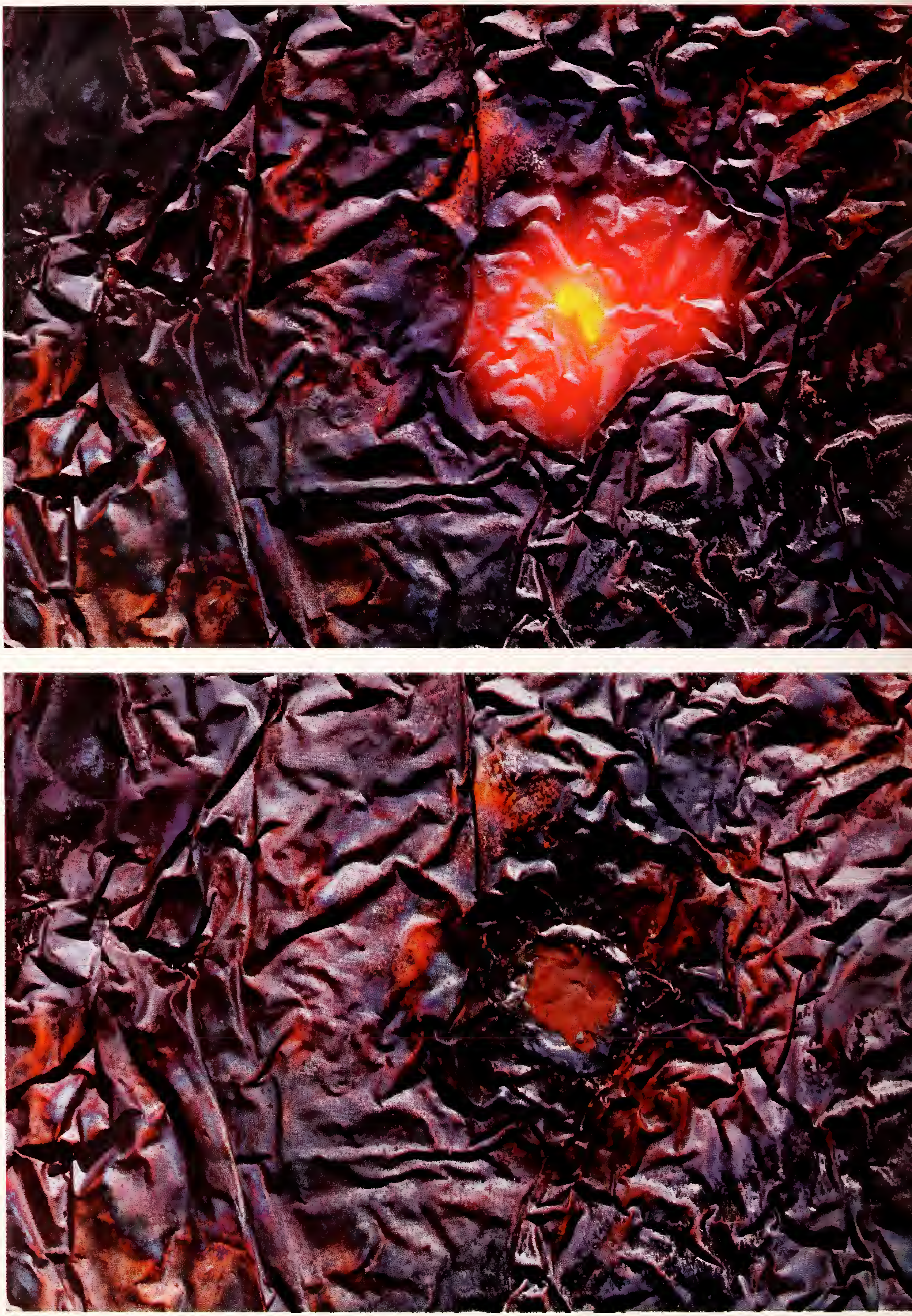

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Pyloric Channel Ulcer	6	3	1	0	2	2	1	1	0	0
Pyloric Ulcer	4	2	1	1	0	1	1	0	0	0
Gastric Ulcer, bleeding	3	1	2	0	0					
Gastric Ulcer	48	31	11	1	5	12	5	7	0	0
Gastric Ulcer, penetrated	1	0	1	0	0	1	1	0	0	0
Gastric Ulcers, multiple	1	1	0	0	0					
Duodenal Ulcer	494	220	195	48	31	99	41	38	13	7
Duodenal Ulcer, bleeding	38	19	15	3	1	2	1	0	1	0
Duodenal Ulcer, obstruction	13	4	3	1	5					
Duodenal Ulcer, perforated	5	2	1	0	2	6	0	3	1	2
Gastric and Duodenal Ulcer	4	2	2	0	0					
Peptic Ulcer, unspecified	25	19	4	0	2	18	8	7	2	1
TOTALS	653	307	239	57	50	142	58	57	17	10
		83.6%					81.0%			

*Clinical reports on file, A. H. Robins Company, Inc.

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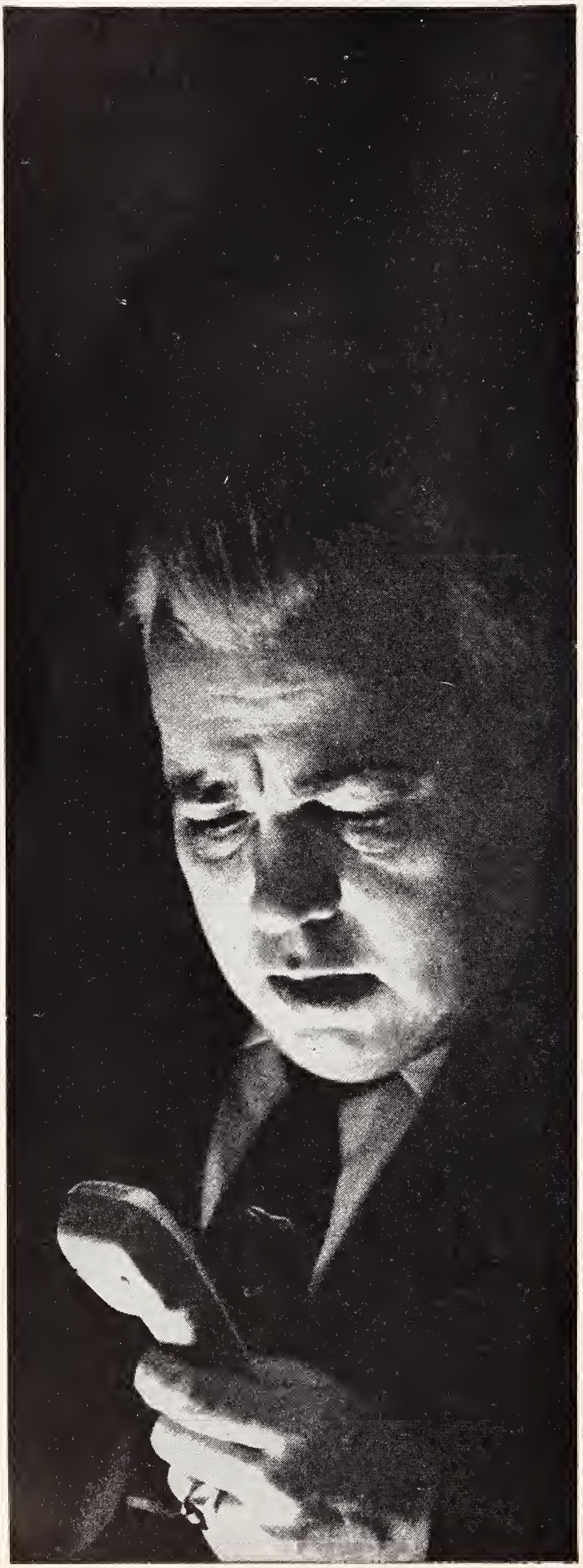

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Potassium iodide	150 mg.
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Medicine

IN WRIGHT COUNTY, Part VI

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Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

H. (Homer) Earle, "Physician and Surgeon, Monticello, Minnesota, office at his residence on Maine Street, opposite the lower ferry. Dr. Earle has for many years past paid special attention to chronic diseases and female complaints" reads his card in the *Wright County Times* of January 20, 1872. His card continues to appear until the end of February, 1872. It seems he died not long after that because according to the *Wright County Times* of October 11, 1873 "the widow of Dr. Homer Earl" died at Elk River on Oct. 12. She was buried in Monticello.

Ira Leslie Edmunds. In November, 1881 a Stearns County newspaper item mentions that Dr. Edmunds of Clearwater visited Dr. Ramsey of St. Cloud, an old classmate at Rush Medical College. It is not known when he came to Clearwater, but as a news item in 1894 states that he had been a successful physician there for twelve years, 1881 is probably the year of his arrival.* In 1881 or 1882 he formed a partnership with Dr. Ramsey and probably moved to St. Cloud.

In March, 1884 he was again in Clearwater. He had recently married Miss Jenny (or Ann Jane) Tollington of that town, the sister of Dr. Gilbert Tollington, and was planning to locate in Montevideo, Chippewa County. Around April 1, Dr. Edmunds and his wife actually left Clearwater for Montevideo, "their new home," but in June they were expected back in Clearwater. He now remained there until at least 1895, probably until 1902. In 1892 he went on a European tour to visit hospitals in England, Scotland and Germany, and in the winter of 1894-95 he took postgraduate work in Chicago in surgery, especially abdominal surgery and diseases of women; he also took some courses in New York in surgery as well as on diseases of the heart, lungs, etc. He planned to spend several months in this postgraduate work. He went to Chicago again in 1896, this time to study with Drs. Senn and Fenger. This all indicates he was a progressive physician who desired to keep up with the latest developments in medicine. From various reports one can gather that he was a successful and active practitioner. In 1895 he and Dr. Tollington were the only physicians in Clearwater. Apparently in the same year he transferred his practice to St. Cloud, but may have lived in Clearwater for a while longer. In 1896 a news item of St. Cloud mentions that Drs. Edmunds, Tollington and Ridgway "performed a couple of tricky operations" at St. Raphael's Hospital.

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*The Wright County Eagle of May 18, 1882 mentions that "Dr. Edmunds of Chicago is stopping here" (Delano,) ready to help anybody who is sick, etc. There is still a possibility that he came to Wright County very late in 1881.

Continued

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Dr. Edmunds was born in Hawksville, Ontario February 2, 1859. His parents were Brooks and Elizabeth Edmunds and he had two brothers and three sisters — all born in Canada. At sixteen he was apprenticed to the family doctor. Later he attended the University of Michigan and graduated from Rush Medical College, Chicago in 1884. Although he seemed particularly interested in surgery, especially gynocological surgery, as well as diseases of the lungs and the heart and it is said that diseases of children was one of the fields to which he paid particular attention. He was licensed in Minnesota November 24, 1883.**

Dr. Edmunds was 6 feet tall, had a ruddy complexion and dark hair. He had a most genial disposition, was very fond of music and loved hunting for relaxation. He was a member of the American Medical Association. In Clearwater he belonged to the Masons and Odd Fellows and in St. Cloud to the Elks Lodge.

In 1902 he moved to St. Cloud from where he returned to Clearwater in 1912. There he remained until his death on January 1, 1921. He was survived by his wife and his daughter, Mrs. Howard A. Muckle of Oakland, California.

J. C. Erickson. *The Wright County Eagle,* of February 3, 1875 reported that "Dr. Ericson of Jordan, Scott County, has leased the store room of Ward Bros. in Cokato and will soon put in a full assortment of drugs. He will also practice his profession in that vicinity." There is no doubt that "Dr. Erickson" is identical with Dr. J. C. Erickson who came to Jordan in 1861 and ran a large drugstore aside from practicing medicine. He supposedly remained in Jordan "thirteen years and probably longer."† It is not known how long he remained in Cokato or what happened to him later on. He supposedly graduated from a medical school.

O. R. Fassett, a graduate of Jefferson Medical College, Pennsylvania, in 1840, was one of the very early pioneer physicians of Wright County. He apparently came to Rockford after the Civil War but in the newspapers his name first appears in 1883. At that time Wright County suffered an outbreak of smallpox and Dr. Fassett seems to have disagreed with other people, as he reports that a certain family in Greenwood did not have the smallpox "but what is called *Acne Vulgaris* or blotched face." ‡ In October of the same year the newspaper mentions a Reverend Dr. Fassett and wife of Rockford. Dr. Fassett acted in both capacities, as physician and minister. In 1884 he resided in Greenwood and in November of that year we learn that there was "married . . . at Trinity Memorial Church . . . October 29, 1884 by the Rector Rev. M. Marshall, Rev. O. R. Fassett, M.D. of Independence, Hennepin County,# Minnesota, to Miss Abbie Bolton of Denver, Colorado."*

In March, 1885 he moved to Minneapolis where he supposedly practiced in the field of medicine and not as minister. When he left Greenwood he was lauded as a good neighbor, always ready to help poor sufferers and also because his charges were very reasonable. Rev. F. A. Baker took over his position at the Advent Church of Independence.

It was not long, however, before he was back in Wright County, locating in "Rockford Village." He had his office in his residence near the Presbyterian Church and "directions for Delano can be left at Lindberg's Hardware store."** He and Dr. Ames were the two physicians in Rockford, which not too long before had none. In May of that year he was appointed Chairman of the Board of Health of Rockford, a position which was taken from Dr. Ames because of his addiction to alchol. Dr. Fassett again divided his labors between medicine and the church. He substituted at his old church — the Advent Church of Independence — when Dr. Baker was absent. His (medical) professional card appeared regularly in the papers. In 1886 he had the satisfaction that a patient

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**This seems to indicate he was licensed before his formal graduation from Rush Medical College. However, there is a possibility that he graduated in 1882 and again two years later.

†"A History of Medicine in Scott and Carver Counties." **Minnesota Medicine**, June, 1948, p. 663.

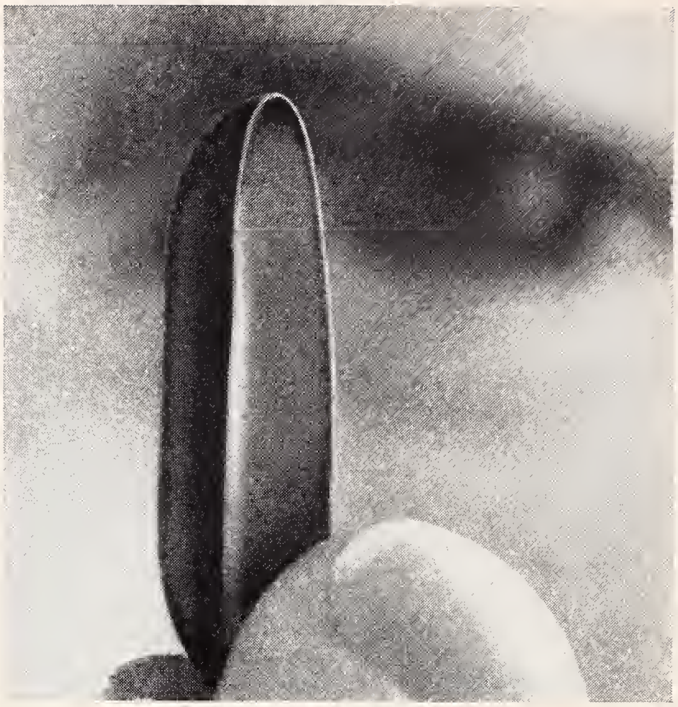
‡**Delano Eagle**, July 5, 1883.

#Possibly an error as present Independence is located in St. Louis County.

***Delano Eagle**, November 6, 1884 (Greenwood, Nov. 5, 1884).

****Delano Eagle**, April 16, 1885.

Continued



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with a disease of the optic nerve who consulted a Minneapolis eye specialist and a St. Paul nerve specialist was told that "Dr. Fassett's treatment was the very best for him."* In January, 1887 he left Rockford for several months in order to take charge of a church in Rochester, N. Y. He returned in April, and again his name appears often in the papers, either telling of his medical exploits or sermons and funeral orations he gave.

Late in 1887 he must have been doing well because it was reported that he was going to move into his own home.

Late in 1888 he reported to the Board of Health eight cases of typhoid fever on the Louis Rausch farm. He was called to various towns in the neighborhood of Rockford. In November, 1889 Diphtheria was raging in Armstrong and he took care of a considerable number of them.

Dr. J. J. Collin remembers him as being in Rockford in the 1890's, driving his one horse buggy through the country side. He was a tradition in Rockford, and it was said that he belonged to the Homeopathic school (though this is not borne out by the school from which he graduated, nor his licence which he received May 9, 1884). In that area he is remembered as a fatherly pill dispenser.

He remained in Rockford through 1898, but is no longer listed there in 1900. He died in Rockford and was buried there. The year of his death is not known, and his tombstone cannot be found.

In August, 1885 Dr. Fassett's brother, Dr. David S. Fassett of Niagara died, "one of the oldest practitioners and most honored citizens of Niagara."†

V. Fell, advertised in the *Wright County Times* (Monticello) from April 19, 1873 until May, 1874 as "Homeopathic Physician and Dentist, Clearwater, Minnesota." He remained there longer, however, and came at times to Monticello as a visiting dentist.‡

Fenlison (initials are not available) practiced in Montrose about two years, 1887 to 1889. He belonged to the Homeopathic school. Dr. Fenlison was married and had two children. He had been a minister and while in Montrose was Pastor of the Montrose Methodist church as well as a physician. He walked when he attended to medical duties, in the country as well as in town. He is reported to have been a neat man and of good appearance. Nothing more is known about him. He is not listed in the "Official Register of Physicians, Minnesota, 1883-1890" and there is no evidence that he was licensed to practice.

Ferte — An item in the *Wright Co. Eagle* of April 25, 1873, dated Clearwater, April 18, states that "Dr. Ferte has sold out his stock of drugs and Phillips Schwab, who has refitted the store, takes possession, the doctor still retaining an interest for the present. He intends to leave here during the summer, and we are sorry to have him go." Nothing more is known about him, not even whether or not he was actually a physician, because the newspaper, in giving him a sendoff, says "It will not be easy to find a man who will make as good a postmaster as he. . . ."

Charles D. Flannigan (*Flanagan*), was a graduate of the College of Physicians and Surgeons of St. Louis in 1883 and was licensed in Minnesota October 12 of the same year. At the time he was licensed he gave as his location Minneapolis, but in 1886 he is listed in Waverly Mills (as Charles Flanagan). He is listed there also in 1890 (as Charles Flanigan) and during these years he was one of three physicians listed in that town. (The others being Drs. W. B. Aubin and P. O'Hair.)

*Delano Eagle, March 4, 1886.

†Delano Eagle, September 3, 1885 reprints the obituary from the **Niagara Daily Journal** August 7, 1887.

‡Wright County Times December 2, 1874.

(To Be Continued)

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Meetings and Announcements

SEPTEMBER

The Midwest Interprofessional Conference, Iowa State University, Ames, Iowa, September 17-18. Contact: D. E. Tyler of the University.

Symposium on Birth Defects, September 27-28, Vanderbilt University School of Medicine, Nashville, Tennessee. Contact: Vanderbilt University.

University of Colorado School of Medicine Postgraduate Course on Fibrinolysis, September 17-19, and Pulmonary Disease, September 24-28. Contact: The University.

New York University Post-Graduate Medical School Course on Occupational Medicine, September 17-November 9. Write: NYU Post-Graduate Medical School, 550 First Avenue, New York.

American College of Chest Physicians postgraduate course "Recent Advances in Diagnosis and Treatment of Diseases of the Heart," September 17-21, Warwick Hotel, Philadelphia. Contact: Murray Kornfeld, Executive Director, Chicago.

University of Illinois College of Medicine, Department of Otolaryngology postgraduate course in Laryngology and Bronchoesophagology September 24-October 6. Contact: University, Chicago.

Methodist Hospital, St. Louis Park, Minnesota Symposium on Chest Diseases September 15. Contact: Jerome T. Grismer, M.D. at Methodist Hospital. Symposium has been approved by AAGP for seven hours credit, Category I.

OCTOBER

Eleventh Annual Conference of United States Civil Defense Council, October 15-19, James White Memorial Auditorium-Coliseum, Knoxville, Tennessee. Contact: Wallace Newman, Director of Civil Defense, Knoxville, Tennessee.

Association of Medical and Allied Publications Seminar, Biltmore Hotel, New York, October 3. Contact: Association in New York City.

American Medical Writers Association 19th Annual Meeting, Sheraton Park Hotel, Washington, D. C., October 12-13. Contact: John Sargeant, 1211 Cathedral Street, Baltimore 1, Maryland.

Medical College of Georgia Course on Clinical Pathology in Medical Practice, October 23-25. Contact: Dr. Claude-Starr Wright at the college in Augusta.

College of American Pathologists, North Central Section, and Wisconsin Society of Pathologists Meeting, Marquette University School of Medicine, Milwaukee, October 26-27. Contact: Wisconsin Society of Pathologists, Milwaukee.

American Rhinologic Society Course "Expanded Surgery of Nasal Septum" at Loma Linda University School of Medicine, Los Angeles, October 29-Nov. 1. Contact the Society in Chicago.

American College of Physicians Postgraduate Course "Basic Mechanisms in Internal Medicine," October 1-5, Medical College of Virginia, Richmond, Va. Contact: College of Physicians in Philadelphia.

American College of Surgeons 48th Annual Clinical Congress, October 15-19, Atlantic City, New Jersey. Contact: American College of Surgeons, Chicago.

American Cancer Society 1962 Scientific Session, Biltmore Hotel, New York, October 22-23. Contact Society in New York City.

University of Illinois College of Medicine Department of Otolaryngology Postgraduate program October 20-26. Contact the University.

Animal Care Panel 13th Annual Meeting, October 2-5, at the Conrad Hilton Hotel in Chicago. Contact: Animal Care Panel, Argonne, Illinois.

American Public Health Association's 90th annual meeting October 15-19, Miami Beach, Hotel Fontainebleau. Contact: Dr. T. E. Cato, Director of Public Health, Dade County, Florida.

Occupational Health Congress, October 2-3, Somerset Hotel, Boston, Mass. Contact: AMA, Chicago.

Scientific Assembly of Interstate Postgraduate Medical Association, Palmer House, Chicago, October 1-4. Contact: Interstate Postgraduate Medical Assn., Box 1109, Madison, Wisconsin.

American College of Chest Physicians Council Postgraduate Course on Clinical Cardiopulmonary Physiology, October 22-26, Knickerbocker Hotel, Chicago. Contact American College of Chest Physicians, Chicago.

American Medical Association National Congress on Mental Illness and Health in Chicago, October 4-6. Contact: AMA-Chicago.

Animal Medical Center Symposium on Human and Animal Diseases, October 10-12 at Hotel Waldorf-Astoria, New York City. Contact: The Animal Medical Center, New York.

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1. Ford, R. A., and Blanchard, K: Journal-Lancet 78:185, 1958.

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NOVEMBER

New York University Medical Center Course on Surgical Rehabilitation of Arthritic Deformities, November 13-16. Contact: New York Medical School.

Southern Medical Association, Section of Ophthalmology Meeting, Miami Beach Florida, Fontainbleau Hotel, November 12-15. Contact: Dr. Albert Esposito, First Huntington National Bank Building, Huntington, West Virginia.

First Annual Conference on Medical Practice Management, November 1-2, Flamingo Hotel, Las Vegas, Nevada. Contact: Nelson Young, 420 Madison Theatre Building, Detroit, Michigan.

American Rhinologic Society Meeting, Statler Hilton Hotel, Los Angeles, November 1-2. Write: The Society, 2210 Lloyd Center, Portland.

Rocky Mountain Medical Journal State Medical Editors Conference, November 3-4, Denver Hilton Hotel, Denver, Colorado. Contact: Publication Office, Denver.

American College of Gastroenterology Course, Morrison Hotel, Chicago. November 1-3. Contact: College in New York.

American Society of Otology Meeting, Chase-Park Plaza Hotel, St. Louis, Missouri, November 8-10. Also, Meeting on November 7-9 in Columbus, Ohio, The Neil House. Contact: Paul A. Younge, M. D., 1101 Beacon Street, Brookline, Mass.

Ninth Annual Meeting of The Academy of Psychosomatic Medicine, November 1-3, Minneapolis, Radisson Hotel. Contact: Dr. Bertram Moss, 5 E. Washington, Chicago, Illinois.

ANNOUNCEMENTS:

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; October 22-November 9; November 26-December 14.

University of Minnesota medical continuation courses; October 2-4 on Pediatrics; October 11-13 on Dermatology; October 29-November 2 on Radiology; November 14-16 on Opthalmology; November 15-17 on Orthopedics; and November 29-December 1 on Cardiovascular Diseases; January 7-11 Introduction to Electrocardiography; January 7-11 Proctology. For further information write 1342 Mayo Memorial, University of Minnesota, Minneapolis.

The next scheduled Part I examination of the American Board of Obstetrics and Gynecology will be held at various examining centers in the United States on Friday, December 14, 1962. Current bulletins may be obtained from: Robert L. Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

Trustees of Caleb Fiske Fund of the Rhode Island Medical Society announce essay contest open to any Doctor of Medicine with a cash prize of $500. Subjects chosen are "Etiological Factors in the Development of Congenital Anomalies" and "Progress in the Relief of Hearing Defects." Entries must be type-written, double-spaced and not exceed 10,000 words. Must be submitted by December 11, 1962 to The Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence, R. I.

The American Thoracic Society offers grants for research in respiratory diseases, including tuberculosis. Deadline for applications for the grant year beginning July 1, 1963 is December 15, 1962. Write: American Thoracic Society, New York.

A new 30 minute medical radio series, featuring members of the University of Illinois Medical Center campus staff will debate on WLS, beginning Sunday July 29, at 11:30 a. m.

Law-Medicine Center of Western Reserve University, Cleveland, will present 15 sessions on traumatic injury beginning Monday, September 24, Contact: University in Cleveland.

Medical Postgraduate Conferences, State University of Iowa: September 19-20 Pediatrics, September 19 Surgery, September 28-29 Urology, October 3 Otolaryngology. October 5-6 Arthritis and Rheumatism, October 13 Radiology, November 7-8 Institute on Abnormal Newborn, November 16 Otolaryngology, November 13-15 Federal Aviation Agency Medical Seminar, November 30 Cardiac Diseases and Respiratory Diseases. Contact: College of Medicine, Iowa City, Iowa

He that outlives a wife whom he has long loved, sees himself disjoined from the only mind that has the same hopes, and fears, and interests; from the only companion with whom he has shared much good and evil; and with whom he could set his mind at liberty to retrace the past or anticipate the future.—Samuel Johnson

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Physician's Diary

A testimonial dinner honoring the golden anniversary of **Dr. Herman Kesting,** physician and surgeon in St. Paul, will be held September 26, 1962 at 6:30 P. M. at the St. Paul Athletic Club. Contact: Mrs. Guy Stoddard, 825 Delaware Avenue, St. Paul. CApitol 2-1442 for tickets.

* * *

Dr. Harold Katkov has joined the partnership of **Drs. R. A. Semsch** and **D. A. Petersen** in the Wayzata Medical Building.

* * *

Dr. Rolland D. Pistulka of Nebraska has become associated with **Dr. C. R. Heinzerling** in Chaska. **Dr. J. M. Mensheha** of Forest Lake has joined the Nicollet Clinic in Minneapolis.

* * *

Dr. R. Engwall of Tyler was the featured speaker at the Hendricks Kiwanis Club in June. He discussed his views on the King-Anderson bill.

* * *

Swedish Hospital has started construction of a new pediatric department in "B" building. It is expected that the department will be ready for use in late fall.

* * *

Roger J. Jackman, son of **Dr.** and **Mrs. Raymond J. Jackman** of Rochester was awarded **a** medal recently for demonstrating outstanding proficiency in medicine and surgery.

* * *

The Chippewa County-Montevideo Hospital and the Louis Weiner Memorial Hospital of Marshall have been accredited for the coming three years by the Joint Commission on Accreditation of Hospitals.

* * *

Dr. C. Wilbur Rucker, Section of Ophthalmology of the Mayo Clinic has been named chairman of the Section on Opthalmology of the AMA.

* * *

Dr. James Leigh of East Grand Forks has joined his father, **Dr. R. E. Leigh,** in a clinic in Grand Forks.

* * *

Fifty-eight Minnesota scientists in eight Minnesota institutions have received grants-in-aid to conduct research on diseases of the heart and blood vessels from the American Heart Association. These grants totaled $163,955.

* * *

Dr. Hendrik J. Svien, member of the Section of Neurologic Surgery of the Mayo Clinic, was elected to membership in the Society of Neurological Surgeons at their annual meeting.

* * *

Dr. Eric M. Nanson of Saskatchewan addressed the annual meeting of the Duluth Surgical Society, and his topic was "A New Look at the Surgery of the Biliary Tree." Officers elected at the meeting were: **Doctors P. F. Eckman,** president, E. C. Bagley, vice president and **John M. Streitz,** secretary-treasurer.

Physician's Diary is devoted to news of activties by you and your associates. You are invited by the Board of Editors to send in notices of appointments, trips and other personal news to the publication office, 496 Lowry Medical Arts Building, St. Paul, Minnesota.

Dr. Harris L. Pearson will begin to practice medicine in Bagley, and **Doctors Donald A. Duncan** and **Richard C. Woellner** have joined the section of internal medicine at the St. Louis Park Medical Center.

* * *

Dr. A. S. Midthune of Lake Park, was recently elected president of the northern district of Minnesota Academy of General Practitioners. **Dr. A. J. Houglum** of Lake Park was elected vice president. **Doctors Curtis Bakken** of Hawley and **Glen Brown** of Halstad were named as directors.

* * *

Dr. Richard K. Winkelmann of the Mayo Clinic has been appointed to the board of directors of the Society of Investigative Dermatology. **Doctors Ronald L. Linscheid** and **Paul E. Hermans** have been appointed to the staff of the Mayo Clinic, Rochester.

* * *

Dr. Loren Leslie has been elected a partner in the Olmstead Medical Group in Rochester, and **Dr. Arnold J. Overland** has joined the Klefstad Clinic in Greenbush.

* * *

Dr. T. R. Murphy of Stillwater has taken over the duties of **Dr. Robert Cottor** as Secretary of the Washington County Medical Society, and **Dr. William A. Autrey** was elected chief of the medical staff of the St. Cloud hospital.

* * *

Doctor John Pone, formerly of Cambridge, Minnesota, has established a practice in Minneapolis, and **Dr. Earl Dagg** has joined the staff at Northwestern hospital in Thief River Falls as radiologist.

* * *

Dr. I. L. Mitby was recently honored for 25 years of practicing medicine in Richfield, Minnesota.

* * *

Two books have been published: One by **Dr. Robert S. Fontana,** Rochester, and **Doctor Jesse E. Edwards,** St. Paul entitled: "Congenital Cardiac Disease: A Review of 357 Cases Studied Pathologically." Another by **Dr. W. Henry Hollinshead,** Mayo, entitled "Textbook of Anatomy."

* * *

Dr. O. Theron Clagett, head of a section of surgery at the Mayo Clinic, recently shared the platform with Astronaut Scott Carpenter when they both received honorary degrees from the University of Colorado.

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In Memoriam

MURDOCH A. NICHOLSON

Dr. Murdoch A. Nicholson, 75, Duluth urologist, died June 21 in Rockford, Illinois, where he was visiting a daughter. He had just been honored by the Minnesota State Medical Association for his half century of medical practice in Minnesota, and by the University of Pennsylvania, which presented him with its Distinguished Senior Alumni Award.

Dr. Nicholson was born in St. Paul and received his degree in medicine at the University of Pennsylvania. He first practiced medicine in Hampton, Iowa, before moving to Duluth in 1913. There he was in private practice until 1918, when he joined the staff of the Duluth Clinic.

He had served as chief of staff of St. Mary's hospital and as a staff member of St. Luke's and Miller Memorial hospitals. Dr. Nicholson was one of the founders of the North Central Urological Society, a member of the American Urological Society, and was a life member of the Minnesota State Medical Association, St. Louis County Medical Society, and the American Medical Association.

He is survived by his wife, three daughters, and two sons.

VICTOR L. SATTERLUND

Dr. Victor L. Satterlund, 75, St. Paul general practitioner, died January 14th. He was born in Star Prairie, Wisconsin and received his degree in medicine from the Milwaukee Medical College.

Dr. Satterlund was a member of many organizations and associations, among them included the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was to have been honored as a Fifty Club member during the annual meeting of the Minnesota State Medical Association in May of this year.

He is survived by his wife and one son.

DAVID K. POLLOCK

Dr. David K. Pollock, 83, Minneapolis physician and surgeon, for over forty-eight years, died June 12 while in the hospital.

He was born in Ohio and received his degree in medicine from the Keokuk Medical College in Iowa. Dr. Pollock was a life member and a 50 Club member of the Hennepin County Medical Society and Minnesota State Medical Association. He was also a member of the American Medical Association.

JOHN McMASTER WAUGH

Dr. John M. Waugh, 57, Mayo Clinc gastroenterologic surgeon and head of a section of general surgery in the Clinic, died August 12th in St. Mary's Hospital, Duluth as a result of a car accident near Superior, Wisconsin. He was born in Tarkio, Missouri and received his degree of doctor of medicine from Rush Medical College of the University of Chicago. Dr. Waugh was a member of the Board of Governors of the American College of Surgeons, former member of the Council of the Minnesota State Medical Association, president of the board of directors of Tarkio College, and a diplomate of the National Board of Medical Examiners. He was also a member of the American Surgical Association, the Western Surgical Association, the Central Surgical Association, the American Association of University Professors, the Minnesota Surgical Society, the Zumbro Valley Medical Society, the Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife, three daughters, and a son.

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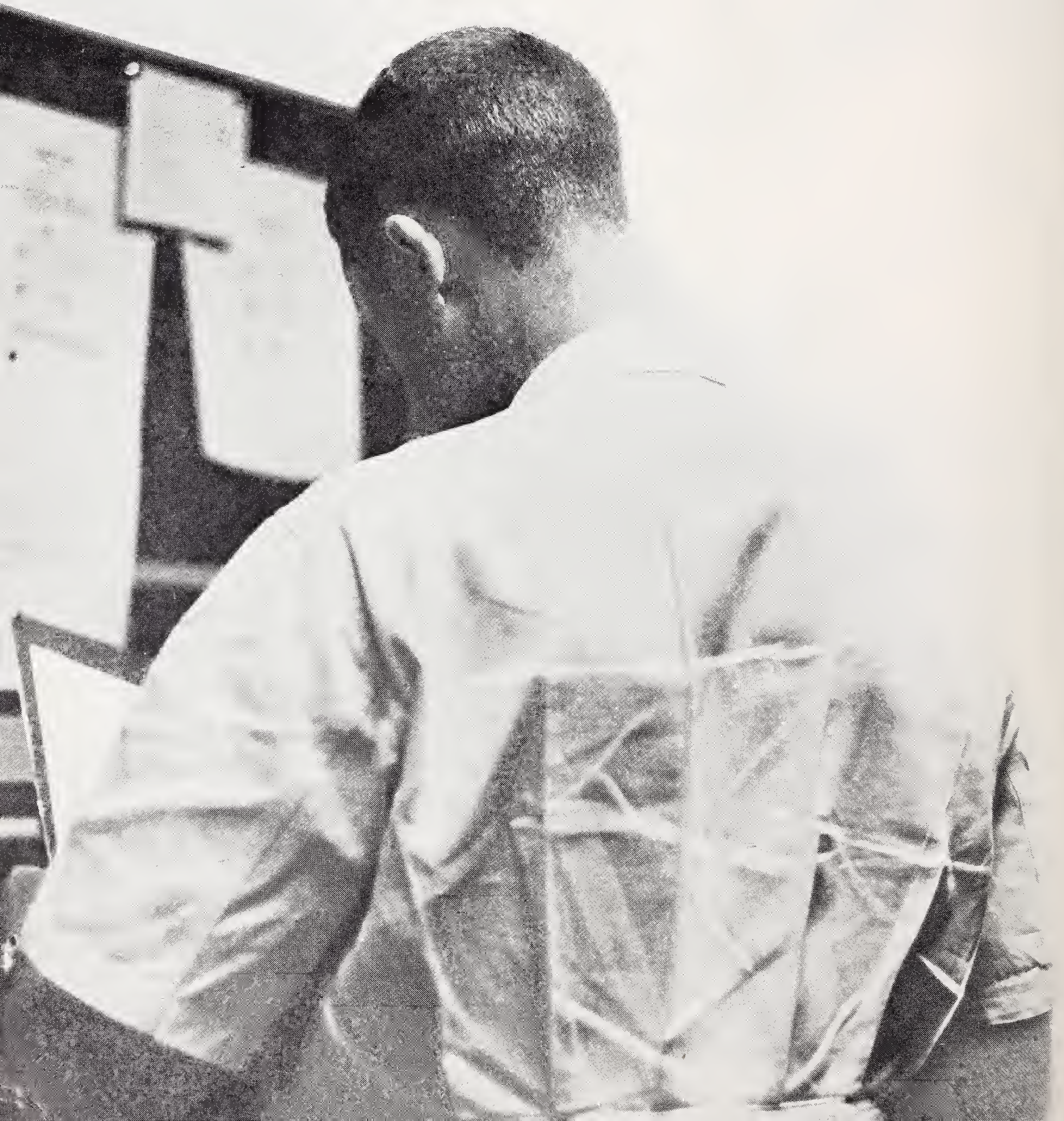

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References: (1) Katz, Y. J., & Bourdo, S. R.: *Pediat. Clin. North America* **8**:1259, 1961. (2) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (3) Ullmàn, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Whitaker, L.: *Canad. M. A. J.* **84**:1022, 1961. (6) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959.

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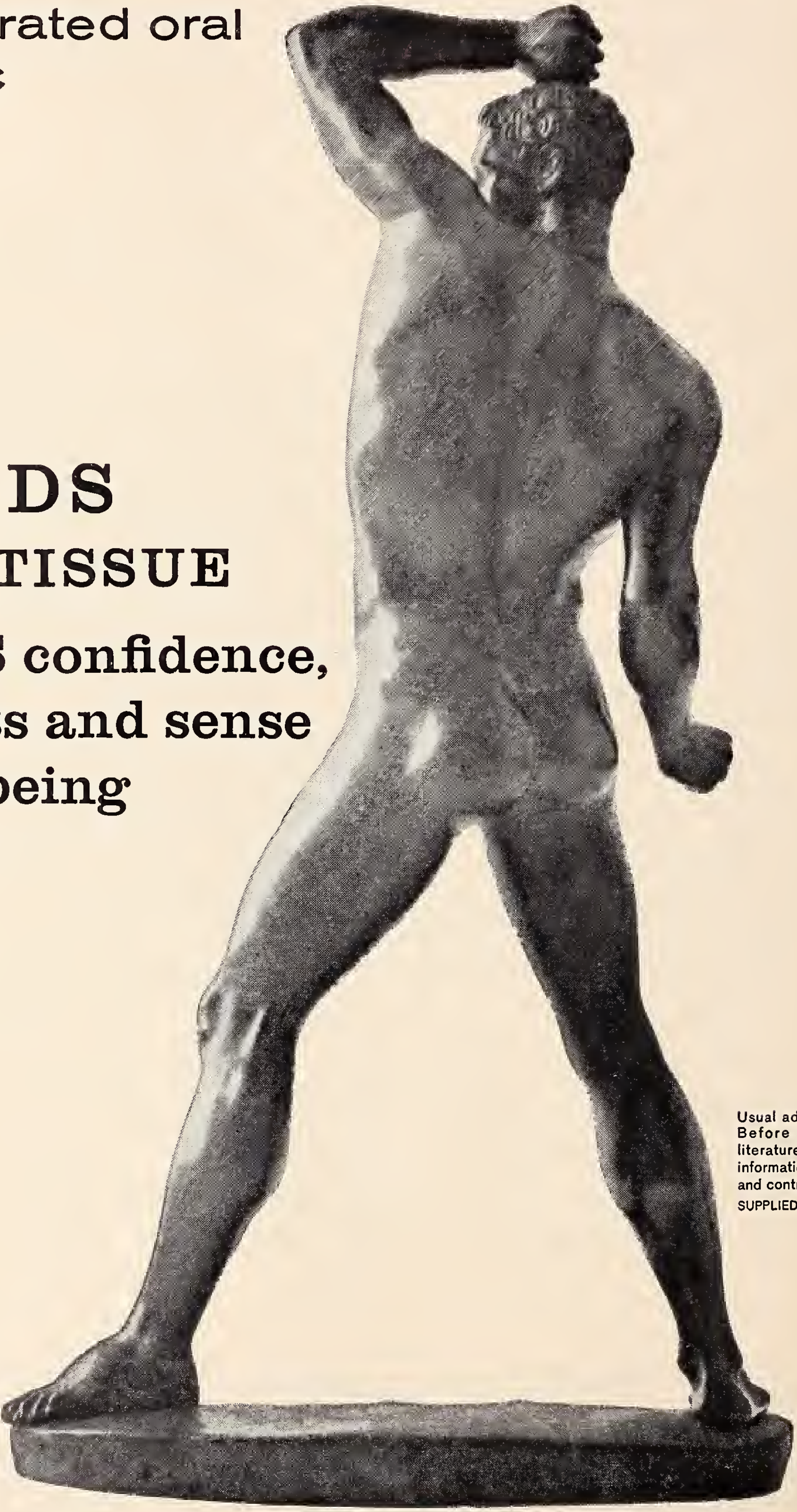

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President's Letter

THE SASKATCHEWAN STRUGGLE

The 23-day dispute between physicians and the government in Saskatchewan has now been resolved. The political environment in which the Saskatchewan struggle took place is significant. There the governing Cooperative Commonwealth Federation party is inclined toward socialism. This philosophy brought compulsory hospital insurance in 1947. Other liberal programs, including governmental automobile insurance, likewise were brought into being. Provincial compulsory hospital schemes were quickly extended to two other western provinces and ultimately, in 1957, compulsory hospital plans became eligible for subsidy by the federal government. By 1960 all provinces had started programs; to do otherwise, while general funds were being used to pay for hospital costs in most provinces, seemed ill advised politically.

The Saskatchewan medical plan called for a "universal, compulsory, tax-supported, comprehensive medical services insurance under government auspices." The physicians' struggle which ensued did not achieve inclusion of a desired test of means of applicants in this sweeping proposal, yet it did accomplish many important objectives. For example, the privilege of medical practice outside the act was secured. The right to make use of several patterns of remuneration was achieved. There were assurances to physicians concerning their right to practice medicine according to their individual skill and judgement. The right to approve three physicians serving on the governing commission was obtained. Importantly, the right to maintain currently existing voluntary nonprofit medical insurance plans was acknowledged. Individual physicians may practice within the government plan, may enroll with a voluntary agency of the Blue Shield type or may practice outside the plan with partial remuneration being provided, if requested, through the government.

Much controversy and public reaction have been generated because of the semantics of the term "strike." Actually, the action by Saskatchewan physicians cannot rightly be termed a "strike." Forgotten by many in the heat of the discussion is the fact that widespread, continuously operating facilities for the care of the urgently ill were maintained by physicians throughout the entire controversy. There were no pickets and no refusals to treat those urgently in need of care. Rather, physicians were expressing profound concern lest the quality of medical care be allowed to deteriorate: the spectre of the English socialized medicine scheme and an insistence upon the privilege of providing first-quality medical care were foremost in the minds of the anxious physicians.

The liability to political exploitation of a seeming "gift" of hospital or medical care is apparent. The irresponsible reference to something as "free," when indeed it is not, remained a device too often used by socialists. Legislation does not create either a medical or a hospital service or the funds to pay for one; legislation simply allows a changed division in the planned expenditure of the tax dollar to pay for a service. That dollar which has suffered the round trip to a federal government suggests the words of Robert Frost as he wondered "what to make of a diminished thing."

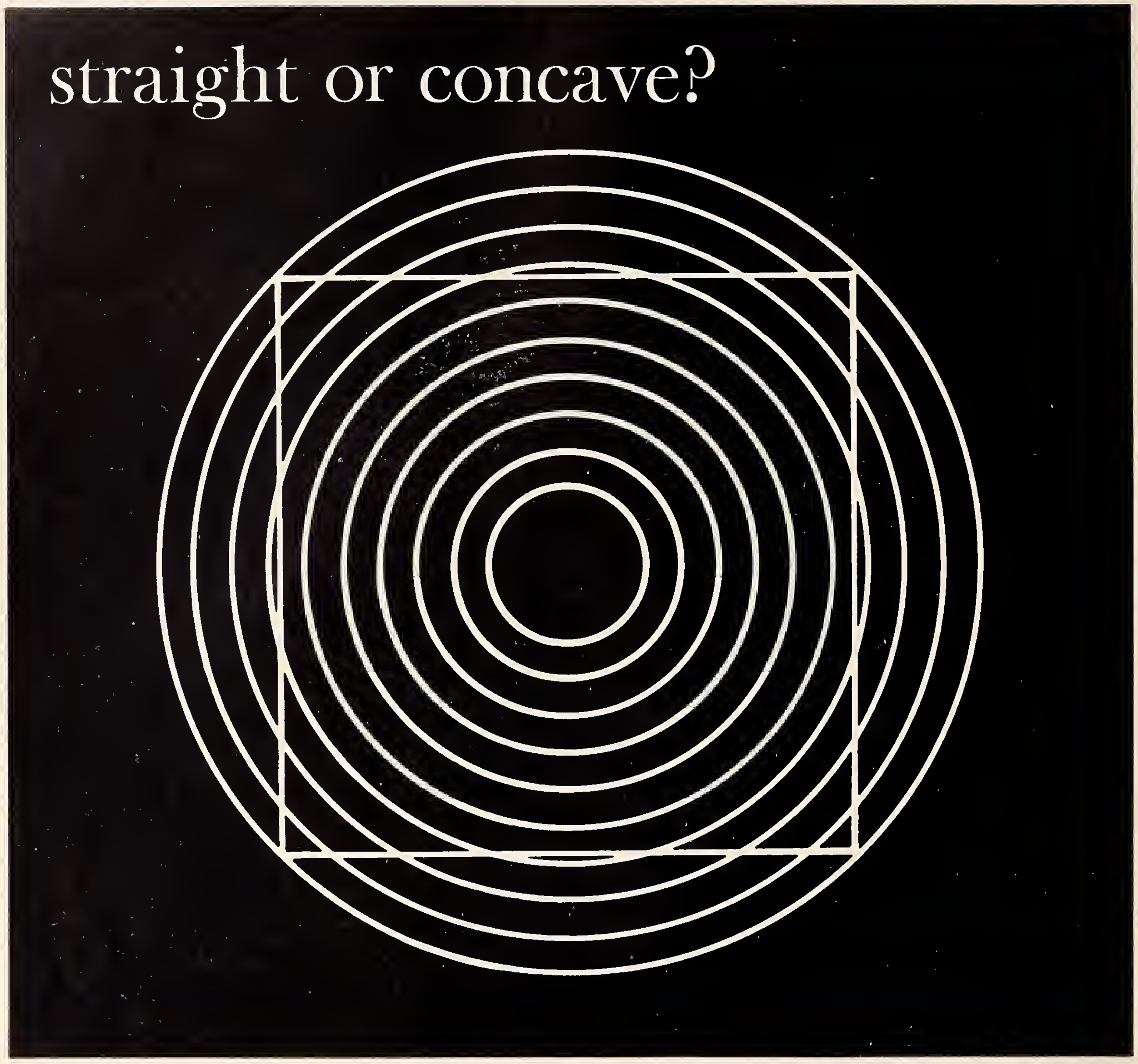
The evident deterioration in the quality of medical care in those countries in which medical practice has become ensnared in governmental control is rarely mentioned by those who would socialize this keystone of free enterprise. The lemming-like migration of newly trained physicians from England is noteworthy. In that land they must practice where, upon whom, in what pattern and to a degree, as specified by a bureaucracy and not on the basis of their own wish, capacity or ambition.

It is regrettable that political motivation and an incomplete understanding of medical practice have brought a threat to the quality of medical care in this large segment of the Canadian population. The struggle by Saskatchewan physicians achieved some rectification of this ill-advised legislation, and to the degree in which the quality of medical care can be maintained there now, the incident was certainly worth while.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association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Minneapolis, Minnesota

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The popularity of long-term anticoagulant therapy is steadily increasing. In view of the time and expense involved and the ever-present possibility of hemorrhagic complications, it is important to have as accurate a knowledge as possible of the degree to which the treatment may affect the course of the patient's disease. The evaluation of this form of treatment is not a simple problem.

The major effort to date has been to attempt to reduce the mortality and the frequency of recurrences in patients who have had a myocardial infarction. Of the many available evaluations of this effort, there are four which deserve particular attention because of the extreme care exercised in the matching of treated and control patients and the elaborate precautions employed to prevent bias.

Studies

In 1957 Bjerkelund[1] published an extensive monograph dealing with the effect of long-term treatment with dicumarol in myocardial infarction. This study, done in Norway, compares the results of treatment in 119 cases with 118 matched control cases in terms of the measured "force of recurrence." The "force of recurrence" is defined as the probability per unit of time at a definite point of time in the observation period that a recurrence will occur. His results show that the force of recurrence is significantly decreased in the treated group in the first year of observation in patients under 60 years of age. The effect upon mortality was similar, i. e., mortality was significantly reduced in the first year in the patients under 60 years of age. Thus Bjerkelund concludes that the treatment is effective, but that the results do not justify treatment throughout life for all patients with myocardial infarction. This conclusion, however, assumes that the advantage gained by the treated group would be maintained if treatment were discontinued.

The second major study, by Manchester,[2] in 1957, compared results of treatment in 204 patients with 200 controls over a one to ten year period. In this study a consistent reduction in mortality and morbidity was shown over the entire duration of the observation.

The third study, by the British Research Council[3] in 1959, reported results observed over a three-year period in a treated group of

195 patients and a control group of 188. The results here showed a striking and significant reduction in the rate of recurrence in the treated group throughout the observation period and a definite reduction in mortality, primarily during the first three months.

The fourth study, by Kuhn et al.,[4] in 1961, compared 166 treated cases with 270 controls for a two-year period. The results showed a consistent lowering of both recurrence and death rates throughout the two years.

Comparison of Studies

The results of these four studies are difficult to compare precisely, because the data are not presented in readily comparable forms. However, the results of all four are consistent in direction. According to the estimate of Kuhn, et al.,[4] they indicate that the rates of both recurrence and death are, on the average, about 50%-60% less in the treated groups. The data in the Kuhn study are presented in life-table form and although Bjerkelund's data are not so presented, life tables can be constructed from them. When compared in this form, the Kuhn and Bjerkelund data agree very closely; they show about 900 per 1000 with no recurrence after two years of treatment compared with about 800 per 1000 in the control groups. The mortality differences are about the same.

Collectively these studies strongly support the use of anticoagulant therapy following a myocardial infarction. If anticoagulant therapy is indicated following an infarction, the question arises, should it ever be discontinued? Thomes, et al.[5] have compared the recurrence rate in a group of patients on continuous treatment, with the rate noted after treatment was discontinued. The results, in life-table form, show that the initially high rate of recurrence is brought rapidly under control during anticoagulant therapy, falling to .36% per month during the second year; and that it remains low throughout the period of treatment. However, the patients who discontinue treatment have a recurrence rate of about 2% per month during the first year, and a rate between 1% and 2% per month for the next several years after discontinuation of the treatment. It was further observed that those who were on treatment the longest had the highest recurrence rate upon discontinuance.

Thus the available evidence supports the conclusion that long-term treatment reduces the mortality and morbidity following a myocardial infarction. Furthermore, it appears that this benefit obtains only as long as the treament is in effect. This is not surprising, because there is no convincing reason to believe that anticoagulants alter the natural history of coronary arteriosclerosis, but only diminish the frequency of additional thrombotic episodes. Thus patients who have been treated for extended periods have had more time for progression of their disease; therefore, if treatment is discontinued, they are more likely to have recurrent attacks. During the period in which treatment is being maintained, recurrences are postponed. If treatment is discontinued in those who have been treated longer, the high rate of recurrence tends to make such a group "catch up" with a group whose initial treatment was briefer. In our study, an estimated 803 per 1000 remained free of recurrence after five years of continous treatment whereas an estimated 365 per 1000 remained free five years after discontinuing treatment. Unless a satisfactory method of predicting which patients could be expected to remain recurrence-free can be worked out, the evidence supports the conclusion that treatment should be permanent.

In the Extensively-Involved Patient

In the earlier experience with anticoagulant therapy, most investigators suggested that treatment be reserved for the more severely involved cases — those with multiple prior infarcts, heart failure, etc. More recent evidence, however, suggests that younger and less severely afflicted patients may derive relatively greater benefit from treatment. Westlund and Haugen[6] in 1956 showed that the mortality ratio (that between actual and expected number of deaths) is much greater in the younger age group, this ratio varying from 15.5 at ages 40-49 to 4.8 at ages 80-89. Inasmuch as the excess mortality from coronary disease is higher in younger persons, it might be expected that anticoagulant treatment would prevent more deaths in the younger age group. Bjerkelund's finding of a greater benefit in patients under 60 would support this suggestion. In our study we found an estimated 736 per 1000 surviving after five years of continuous treatment. Inspection of the data showed that many of the deaths occurred among a small number of "poor risk" patients. To produce a purer sample of coronary disease, the patients with diabetes, cardiac failure, and enlarged hearts were removed from the sample. This eliminated 31 cases from the treated group of 156 cases, and the estimated five-year survival on treatment in this refined group was 912 per 1000. These data suggest that anticoagulant treatment is most effective in those cases in which prevention of thrombosis can be expected to prevent death, but that less is to be gained in the presence of advanced or complicated disease.

In the Good-Risk Patient

The question often arises as to whether the "good risk coronary" patient needs treatment at all; some widely-known reports have indicated that the prognosis in such cases is so good that treatment does not accomplish enough to justify the risk. These reports, however, have been based on experience with short-term treatment and brief follow-up observation. In our own data, good-risk cases were selected using the following criteria: age under 60; no history of previous infarct, diabetes, heart failure, phlebitis, embolism, or polycythemia; absence of heart block, arrhythmia or shock. A total of 44 such cases were found. During continuous therapy no patient in this group had a nonfatal recurrence. However, after discontinuing therapy, the recurrence rate was high; roughly the same as that in the more severely-involved cases. In this small group, the death rate was low, even in those who discontinued treatment. Our conclusion is that long-term treatment in these "good risk" cases is warranted because of the lower incidence of nonfatal recurrences during the maintenance of treatment, as well as the already mentioned possible reduction in mortality.

In Angina Pectoris

The question as to whether anticoagulant therapy is indicated in patients with angina pectoris who have never had a definite myocardial infarction is a difficult one to answer. Since the symptom of angina pectoris can be considered clear-cut evidence for the existence of coronary disease, and since the pathological changes in the coronary arteries in patients with angina are apt to be advanced rather than minimal, and since many patients with angina have had unrecognized coronary thrombosis, it is reasonable to anticipate that long-term anticoagulant therapy would be useful. Bjerkelund quotes a personal communication from Waaler to the effect that long-term treatment reduces the mortality and the incidence of infarction. This investigation, however, suffers from the absence of a matched control group. In our own study of 156 patients with coronary disease we have tried to compare the effect of a history of prior angina with a history of prior infarct on the incidence of recurrent infarct. The results show that the frequency of recurrence after discontinuing treatment was considerably higher in patients with prior angina and with prior infarcts than in patients with neither. The effect of prior angina appeared to equal or exceed the effect of a prior infarct on the tendency to subsequent recurrence. In our patients with prior angina, the nonfatal recurrence rate was very low while on continuous therapy. Although there is little specific evidence relating to the effects of anticoagulant treatment on angina pectoris, there is good reason to believe that the significance of angina is similar to that of a myocardial infarct. Therefore it appears reasonable to accept angina pectoris as an indication for long-term anticoagulant therapy.

In Hypertension

Diastolic hypertension has been considered to be a relative contraindication to anticoagulant treatment but actually there is very little information available on the subject. We have compared the results of treatment in 225 patients with diastolic pressures under 100 with 72 patients with diastolic pressures over 100. These groups include patients with coronary disease, cerebrovascular disease, venous thrombosis, and periperipherol thrombosis or embolism. In hypertensive patients, our results show that the rate of nonfatal recurrence is higher in the first year of treatment, but that it does diminish and tend to remain low thereafter. The recurrence rate after discontinuing treatment was higher in hypertensive than in normotensive patients. Anticoagulant treatment appeared to exert a beneficial effect in both groups, both on recurrences and deaths. However, the rates were higher in hypertensive patients whether they were on or off treatment. The presence of hypertension, therefore, does not appear to be a contraindication.

In Cerebrovascular Thromboembolism

The other major category of disease in which long-term anticoagulant therapy is being used is cerebral thromboembolism. Because of the possibility of producing or aggravating cerebral hemorrhage, investigators have been more reluctant to use anticoagulants in strokes than in heart attacks. By 1958, however, three reports were available on anticoagulant treatment of cerebrovascular disease. Fisher[7] showed that recurrent episodes of "transient ischemic attacks" could be arrested; Millikan, et al.[8] found that attacks of vertebral-basilar artery insufficiency could be stopped, that the mortality in vertebral-basilar artery thrombosis could be reduced, that the symptoms of intermittent carotid insufficiency could be arrested, and that the frequency of hemiplegia in advancing carotid thrombosis could be reduced with anticoagulants. McDevitt, et al.[9] found that the frequency of thromboembolic episodes was much reduced during anticoagulant treatment. In 1959 Robinson, et al.[10] published a life-table analysis of survival after untreated cerebral thrombosis; at the end of three years, only 590 per 1000 survived, and about two thirds had recurrences within four years. An analysis of our own experience,[11] also presented in life-table form, shows that some recurrences appear during the first year on treatment, but that by the end of the first six months recurrences become rare. We found an estimated 841 per 1000 recurrence-free at five years. After discontinuing treatment the recurrence rate was roughly 20% per year. Mortality on treatment was low, with 889 survivors per 1000 at two years. This evidence supports the use of anticoagulants in cerebrovascular disease; in fact, it suggests that the basic rationale and the results are rather similar to those in coronary disease. Both diseases are basically due to progressive arteriosclerosis in the respective vascular beds; both tend to be complicated by thrombotic interruption of blood flow with the resultant symptoms. These interruptions can be prevented with anticoagulants. In cerebrovascular disease, as in coronary disease, treatment is effective only as long as it is continued.

In Other Conditions

The other condition in which long-term anticoagulant therapy is indicated is auricular fibrillation or mural thrombosis in which peripheral embolism has already occurred. Protracted, but terminable, therapy is indicated in patients with pulmonary embolism. Prolonged treatment may be indicated in some patients with retinal thrombosis. Preoperative treatment for three or four weeks is indicated prior to mitral commissuratomy.

Summary

Finally it should be emphasized that in the conditions under discussion the purpose of the treatment is prophylactic rather than curative. The evidence for improving the prognosis in a particular acute episode is not so good as the prospect for preventing recurrences. Intensive early treatment with heparin is probably harmful in cerebral thrombosis. Long-term treatment is safe only if the patient is co-operative, understands the problems in treatment, and is under careful dosage control.

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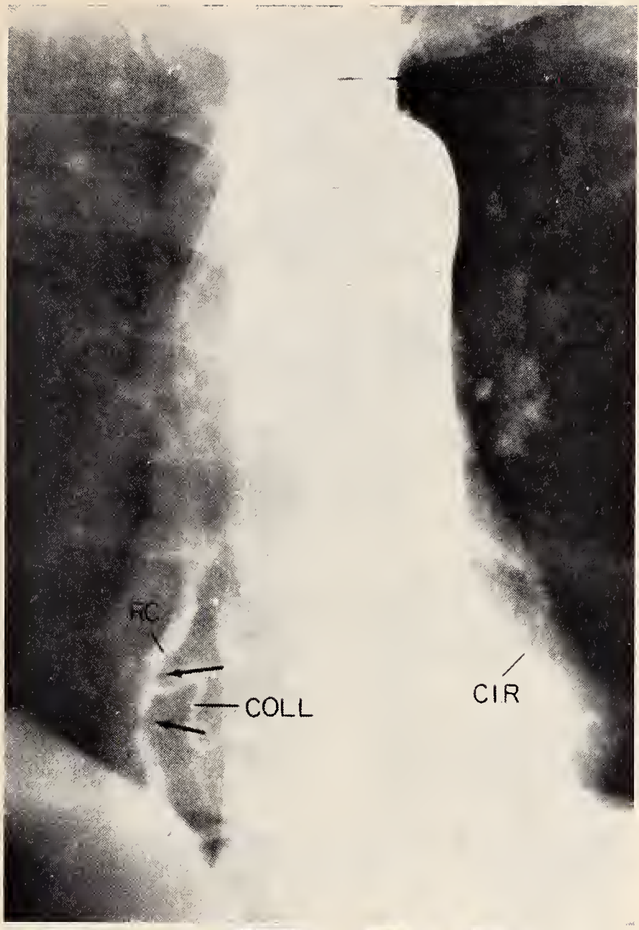

Fig. 1. Anteroposterior view. Arrows point to marked narrowing in the right coronary artery (RC). Between the arrows is seen a collateral branch (COLL). Superimposed on the left side of the heart shadow is the circumflex division of the left coronary (CIR).

CORONARY ARTERIOGRAPHY

an instructive case

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X-RAY-EXAMINATION of the coronary circulation has proved to be a safe, practical and useful diagnostic tool. Over 250 studies have been done at this clinic with one death, a patient who had a myocardial infarction while the cutdown was being performed. No other complications have occurred. When more direct surgical measures are developed for the treatment of coronary artery disease, these roentgen examinations will be absolutely essential, both for evaluating the extent of insufficiency and for planning the operative procedure. In our experience, patients with

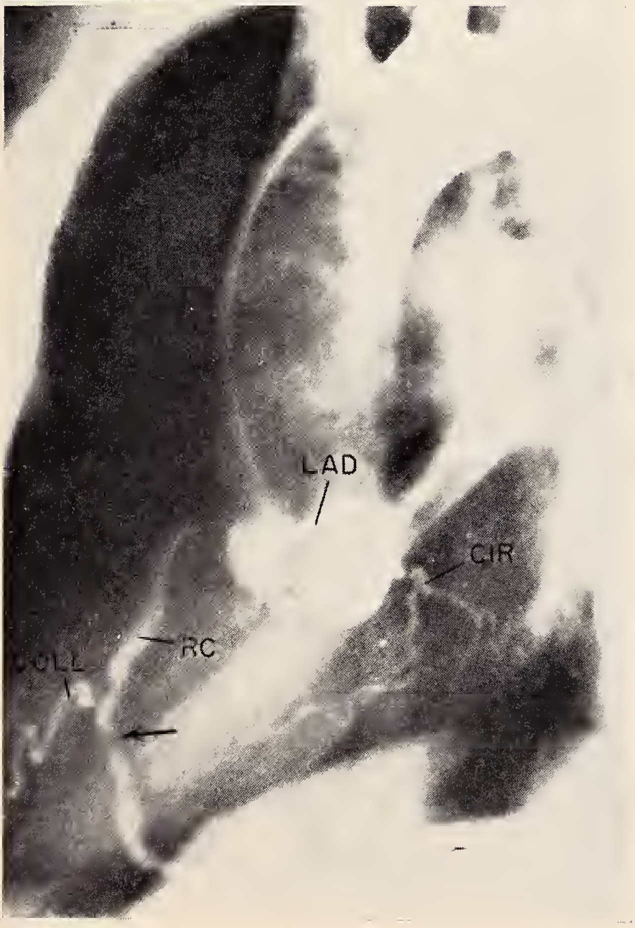

Fig. 2. On the lateral projection the narrowed right coronary is again outlined. The circumflex appears to have a pinpoint diameter at its takeoff. The left anterior descending branch (LAD) is seen to be occluded 2 cm. from its orifice.

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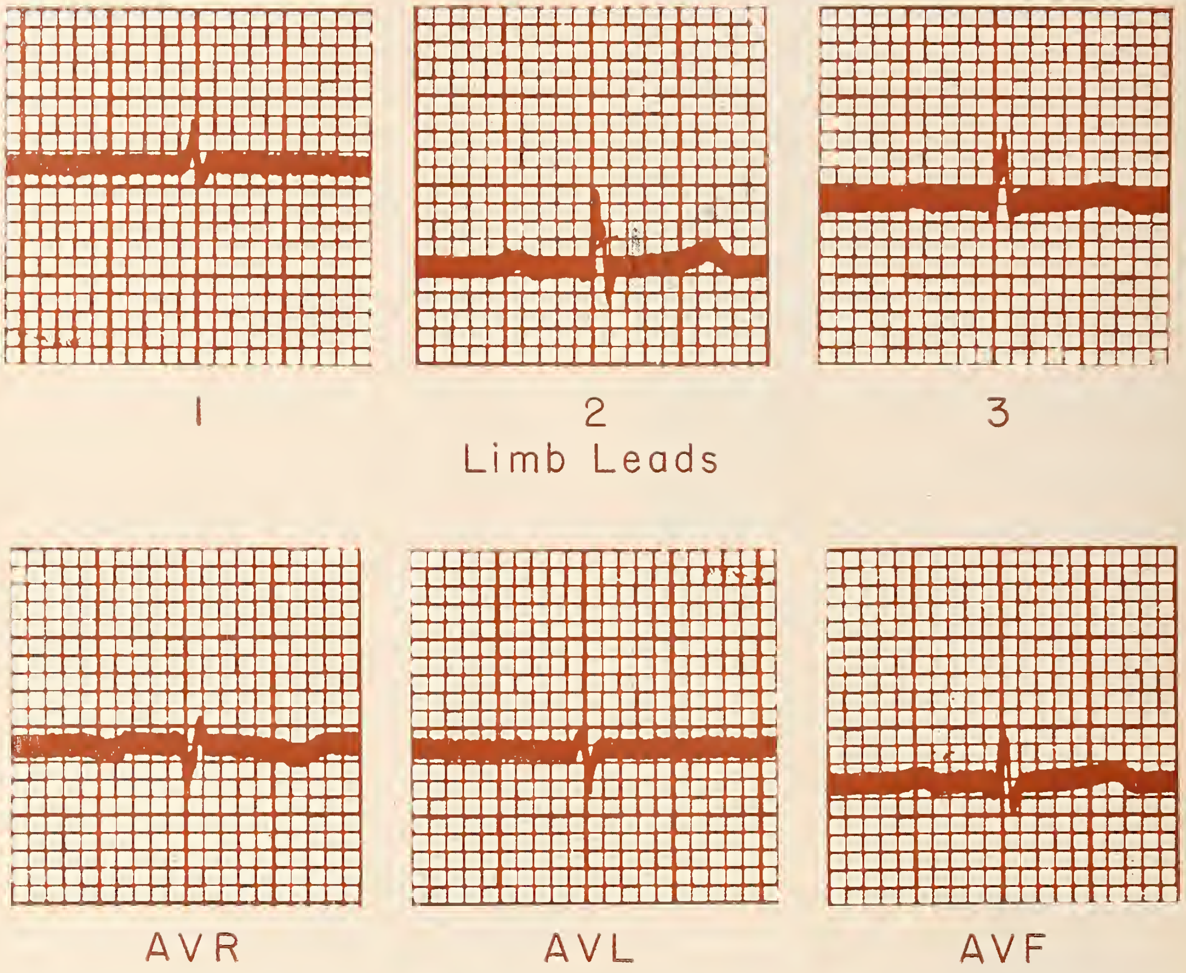

Fig. 4. The normal electrocardiogram.

classical angina and the electrocariographic changes of ischemia or infarction have invariably been found to have severe coronary artery disease. In fact, in every instance studied, at least one of the three major branches has been completely occluded. Conversely, subjects with atypical chest pain and normal electrocardiograms, have often had perfectly patent coronary arteries. A number of individuals on regimens of medication and restricted activity for suspected coronary insufficiency have been shown by arteriography to have normal coronaries. They have thus been freed from their limitations as well as from the implied threat of sudden death.

While the history is undeniably the most important single factor in evaluating coronary insufficiency, it is occasionally misleading. Presented here is a case illustrating the difficulties involved in judging possible angina on the basis of symptoms and electrocardiograms.

Case Report

A 60-year-old white male of Swedish descent stated that three years prior to admission he had an episode of severe, nonradiating, sharp left inframammary pain, which lasted approximately 30 minutes. Since that time, he had three more similar "attacks" persisting as long as two hours. In addition, he had frequent brief episodes of similar well-localized left precordial pain. The distress was sometimes associated with exercise but might start while the patient was at rest. Sublingual nitroglycerin was without effect. No symptoms of congestive heart failure had ever been noted. The patient had two brothers who died as the result of myocardial infarction; one at the age of 39, the other at 54.

The blood pressure was 130/70 and the pulse 72. Examination of the heart and lungs revealed no abnormalities. The liver was not palpably enlarged and the peripheral pulses were normal. Complete blood count, urinalysis, bleeding, clotting, prothrombin times and platelet count were all within normal limits. The serium cholestrol was 330 mgm. %. Chest X-ray was negative and the electrocardiogram showed no abnormalities (See Fig. 4).

Because the patient was an anxious individual, familiar with the symptoms of myocardial ischemia,

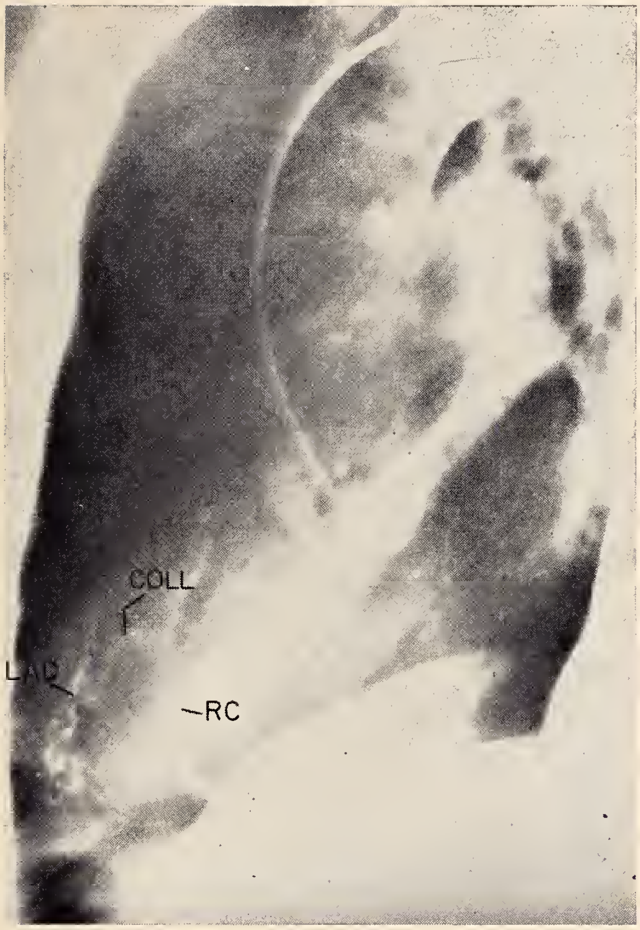

Fig. 3. A later lateral view. The dye has faded in the right coronary but there is still a shadow of the large tortuous collateral vessel seen in Figures #1 and #2. In addition, the anterior descending branch of the left coronary has now filled retrogradely up to the point of occlusion.

the pain atypical in character, and the electrocardiogram normal, the examining cardiologist thought that the coronary arteries were probably not significantly diseased, and that the symptoms were without organic basis.

Representative reproductions of the coronary arteriogram are shown here (Figs. 1-3). As can be seen the changes are, indeed, severe. The anterior descending branch of the left coronary is completely occluded 2 cm. from its origin (Figs. 1 and 2). At two points, the right coronary artery can be seen to be narrowed to about a millimeter in diameter (arrows). In a lateral view (Fig. 3), the left anterior descending branch is filling in a retrograde fashion around the apex through a large collateral from the right coronary artery. The circumflex fills with contrast medium but is also narrowed to a pin-point diameter near its take-off.

The patient's failure to exhibit typical angina and electrocardiographic changes is probably due to the ample collateral circulation between his right and left coronary arteries.

Summary

1. History and electrocardiographic examinations can be misleading in the evaluation of the coronary circulation.

2. Collateral filling of a proximally occluded coronary artery is graphically illustrated.

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Featherbedding

A man with a good job, doing nothing, on strike for more pay.

"Crossing the Border"

Senescence begins
And middle age ends
The day your descendants
Outnumber your friends.
Ogden Nash.

THE TREATMENT OF EARLY CARCINOMA OF THE CERVIX

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In any discussion of radiation therapy as it relates to early carcinoma of the cervix, it is imperative that a sharp distinction be made between carcinoma in situ and invasive squamous cell carcinoma. The latter is treated with radiation, whereas carcinoma in situ of the cervix has been and continues to be treated surgically. In nearly all of the reported series, radiation therapy is seldom utilized. This is not because such treatment cannot eradicate the disease; indeed it is evident that radium therapy even in moderate doses will destroy the primary lesion in nearly 100 per cent of the cases. But because radiation therapy results in the loss of ovarian function, surgery is preferred in the noninvasive carcinomas of the cervix. Consideration must also be given to the morbidity associated with radium treatment; this is minimal but is a factor that is considered in the preferential use of surgery.

The few patients with carcinoma in situ that are treated with radiation are usually treated with radium to the exclusion of external irradiation. A single application of 3000 milligram hours of radium appears to be sufficient to eradicate the lesion. Such treatment has generally been reserved for patients who are poor surgical risks. In a recently published series including 40 cases treated in this manner, one patient later developed invasive cancer.

I feel that the use of moderate doses of radium in treating any case of carcinoma in situ has little to recommend it. If abnormal epithelium remains, there is always the possibility that invasive carcinoma may be present, and if this is the case a full course of radiation is indicated, rather than a moderate dose of radium.

For invasive carcinoma of the uterine cervix, it is generally agreed that radiation therapy is the most effective means of treatment. In selected patients with early lesions, surgical results approximate those of radium thearapy. Since early in the twentieth century radium alone, or in combination with external irradiation, has been widely accepted as the method of choice in the treatment of this disease.

An analysis of the results of radiation therapy for all stages reveals a progressive improvement in the five-year survival rate. Figures compiled from numerous institutions throughout the world reveal a 26 per cent five-year survival in the period from 1926 to 1930. In successive five year periods the figure increased progressively to 29, 32, 37, and finally to 43 per cent.

This increasing survival rate can be attributed to earlier detection of cancer, and to improved radiotherapeutic methods. Recently published results of treatment from the University of Minnesota show a five-year survival rate of 58.8 per cent. When one compares this figure with that from other world centers, it is noted that the percentage of cases detected early is higher in the Minnesota group. It is also evident that the cure rate for cancers of comparable stages is better in the Minnesota group. This latter finding suggests a more effective radiotherapeutic approach. I have also included the recently-published figures from the Mayo Clinic; which reveal an over-all five-year survival rate of 49.1 per cent. It should be pointed out, however, that many of these patients had a poor prognosis from

THE ROLE OF COBALT 60 AND OTHER RADIATION SOURCES

the beginning since they had received previous therapy that did not control their disease. These figures indicate how well carcinoma of the cervix is managed in our large medical centers.

Method of Radiation

The method of radiation therapy that gives the best results is a combination of external irradiation and radium, a form of therapy used in nearly all medical centers, though individual variations exist in methods of application. We prefer to give external irradiation first and follow this with the radium application to the uterus. By following this procedure, the bulk of the tumor mass has diminished by the time the radium is applied, resulting in a more favorable distribution of radiation.

Methods of radium application to the cervix are usually similar to or adapted from methods originated in Stockholm, Paris, or Manchester. The technique varies with regard to the size and shape of the applicators, the quantity of radium used, and the time it is left in place. In all techniques the intent is to deliver sufficient radiation to destoy the carcinoma in the cervix and in the immediate paracervical tissues. An attempt is made to deliver at least seven thousand roentgens to Point A, located two centimeters lateralward and two upward from the center of the cervix, the site of the crossing of the uterine artery and the ureter; while Point B, located three centimeters lateral to Point A at the site of the external iliac and obturator nodes, receives two thousand roentgens. From a practical standpoint these locations are important in that they represent potential sites of tumor extension.

We prefer to use the Kaplan colpostat containing 50 milligrams of radium, to be left in place continuously for one hundred hours. The radium is contained within thin platinum or brass containers in order to filter out the alpha and beta particles and to allow transmission of the desirable gamma radiation through the applicators. Twenty milligrams of this radium are placed in the intrauterine tandem, and 10 are placed in each of three rubber corks applied to the cervix, aligned in the coronal plane. We have several Staff men who prefer the Ernst applicator, a rigid one made of monel, which uses sixty to ninety milligrams of radium, depending on the depth of the uterine canal and the size of the vault.

Radioactive cobalt 60 can be used as a substitute for radium in these applicators, and either radium or cobalt 60 can be used in the form of needles inserted in the paracervical tissues. This interstitial application of radioactive cobalt has been utilized to only a limited degree, but in some hands it appears to be a satisfactory method of treating carcinoma of the cervix. Another radioactive isotope, colloidal gold 198, has been used in several institutions employing an injection technique; but this has not proven to be a satisfactory method of therapy, and its use has been almost entirely discontinued.

The Dosage

Because the dosage of radiation from radium diminishes rapidly as the distance from the radium increases, we find that the dosage at the lateral pelvic wall is inadequate to destroy cancer cells. For this reason external irradiation is a necessary supplement to the radium treatment. Conventional X-ray or supervoltage therapy is given before, after, or during the course of the radium application. We prefer to give the external irradiation before the radium application; this is directed to the pelvis in order to increase the dosage to the lateral pelvic wall so that the total quantity of radiation in this region is raised to a cancerocidal level. It has been our practice to deliver three thousand three hundred tissue roentgens diffusely through the pelvis, using the cobalt 60 teletherapy unit. In the patient of average size, this is accomplished in four weeks, treatment being given five or six times a week.

Regarding early cancer of the cervix, it is sometimes argued that radium application is sufficient treatment. However, since approximately 17 per cent of Stage 1 carcinomas have lymph node metastases, we believe it best to give external irradiation in all cases of invasive carcinoma of the cervix regardless of Stage, since with radium application alone, the dose to lymph nodes five centimeters distant is not generally regarded as cancerocidal.

Supervoltage Radiation

Cobalt 60 teletherapy is one of the forms of so-called supervoltage radiation therapy, supervoltage being generally defined as over one million electron volts. Included in this category are supervoltage X-ray generators, cobalt 60 teletherapy units, and less commonly-used high-energy devices, such as betatrons. The radiation from cobalt 60 and from other forms of supervoltage equipment has the same basic effect on cancer cells as radiation from conventional X-ray therapy units. It should be pointed out however, that any increase in salvage attributable to supervoltage techniques, is due to the fact that the supervoltage modality enables one to deliver a higher dosage of radiation to the tumor.

In supervoltage radiation, gamma rays or X-rays of over one million electron volts are employed, of such high energy that the ionization responsible for the radiation effect is very low at the skin and builds up to a maximum in the subcutaneous tissues. It is primarily because of this skin-sparing effect that we are able to give higher radiation doses. Briefly, the advantages of supervoltage radiation include:

(1) Elimination of uncomfortable skin reaction.

(2) Increased depth dose.

(3) Decreased absorption of radiation by the bone.

(4) Better distribution of radiation in tissue.

(5) Decreased incidence of radiation sickness.

In the treatment of all Stages of carcinoma of the cervix, it has been our practice to deliver a radiation dosage of similar biological effect to that which we previously gave with conventional X-ray therapy. In so doing we anticipate no increase in cure rate.

Conventional X-ray therapy

Conventional, deep X-ray therapy, so-called orthovoltage therapy, is delivered at two hundred and fifty thousand or four hundred thousand volts. In this form of therapy, the radiation dose is greatest at the skin and consequently, skin reaction limits the quantity of radiation that may be given.

Conventional X-ray therapy is just as effective as supervoltage, if comparable dosage is given. The reason we prefer to use cobalt 60 radiation in cervical carcinoma is that skin reaction is eliminated and therapy is more comfortable for the patient. It is also true that decreased radiation to the bone should decrease the incidence of radiation necrosis and fracture in the femoral necks.

CARCINOMA OF THE CERVIX

Table .1.

STAGE	5 YEAR SURVIVAL (%)	
	WORLD	U. OF M.
1	70	81
2	49	60
3	27	35
4	7	3
ALL	43	59

Table .2.

STAGE	5 YEAR SURVIVAL (%)	
	WORLD	MAYO
1	70	83
2	49	73
3	27	52
4	7	23
MODIFIED		21
ALL	43	49

Survival Rate

Because it is possible to deliver higher doses, the use of supervoltage has resulted in an increase in reported five-year survival rates in patients with carcinomas in other parts of the body. Fletcher reports a substantial improvement in his survival figures in advanced Stage II and Stage III carcinomas of the cervix using a Betatron, delivering four thousand to six thousand instead of the more conventional dose of three thousands to three thousand five hundred roentgens. To deliver this high dosage without a marked increase in complications the radium dosage is diminished.

In view of these findings and the reports of others, we are considering an alteration of our therapy regimen by increasing the dosage in the more advanced Stages.

Summary

(1) Radiation is seldom employed in the treatment of carcinoma in situ, but if used, eradication of the lesion can be expected in nearly 100 per cent of the cases.

(2) Radiation therapy is the most effective means of treating invasive carcinoma of the cervix. Radium application to the cervix is ordinarily sufficient to eradicate the primary tumor; however, external irradiation should be given to raise the dose to the lateral pelvic wall up to a cancerocidal level. This is a moderate dose in the neighborhood of three thousand to three thousand five hundred roentgens and can be given with equal effectiveness using orthovoltage techniques, or supervoltage techniques. We prefer to use the latter because of the decreased morbidity associated with this form of treatment.

(3) Because larger doses of radiation can be given, supervoltage therapy appears to be yielding better cure rates in other parts of the body and affords promise of increasing the salvage rate in more advanced stages of carcinoma of the cervix.

WHAT'S YOUR DIAGNOSIS?

This 18-year-old boy was admitted to the hospital complaining of malaise, fever, chills, nausea, and vomiting. He gave a history of multiple operations, none of which seemed to have any relationship to his current illness. The heterophil agglutination test was positive with a titer of 1:3584. The blood picture revealed a typical diagnosis of infectious mononucleosis. At the time of admission his spleen was found to be palpably enlarged and tender.

Shortly after admission to the hospital he became more acutely ill than previously. Following a coughing episode he experienced pain in the left side of the abdomen, shoulder strap pain, weakness, and prostration. He was pale and shockey but his blood pressure was not at shock level. He was placed on steroid medication because of the apparent toxicity of his illness, and within the next 48 hours he was markedly improved.

His hemoglobin on admission was 15.6 grams. Two days later it was 13.4 grams. In the next 48 hours his hemoglobin dropped progressively to 12.6, 12.4, 11.5, and finally to 10.0 grams. The spleen was now not palpable and it was not tender.

What is your diagnosis? See page 1022.

What we need is not the will to believe but the wish to find out, which is the exact opposite.—Bertrand Russell

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A mighty name has all the power of a fairy's wand.—Balzac

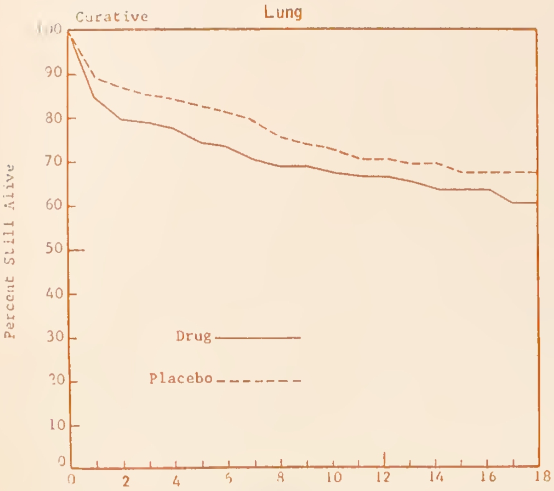

Fig. 1

The Chemotherapy of

Chemotherapy for serious visceral cancers is yet unproved as a significant lifesaving measure. Indeed, this author presents a decreased survival for certain patients with lung cancer treated with surgery and chemotherapy as against surgery alone. Physicians generally should be cautious in their use of cancer chemotherapy drugs until investigators can demonstrate increased benefits and reduced risks from their use.

BRONCHOGENIC CARCINOMA presents one of the more formidable problems faced by medical science today, the incidence having increased from 0.7 per 100,000 males in 1914 to 28.4 per 100,000 in 1956.[1] During 1958 there were 4,142 cases of bronchogenic carcinoma admitted to Veterans Administration hospitals. The treatment of this condition has given results that are far from satisfactory; cures are, for all practical purposes, limited to those cases that may be resected, and the over-all five-year survival rate is only 7-8%. Although this disease is to a large extent preventable, it seems evident that little may be expected from this line of attack, and any real improvement must come from some new, systemic form of therapy.

In the eight years since the Cancer Chemotherapy National Service Center (C. C. N. S. C.) was established, the organization of applied cancer research has become highly developed. The program in this field now includes over 500 clinical investigators in 200 hospitals and costs 47 million dollars a year. The search for new drugs involves the screening of 50,000 new compounds each year, but this screening program suffers from the fact that there is no reliable yardstick with which to evaluate the new compounds that are developed. The principal animal screen used at present involves the treatment of three transplantable mouse tumors: sarcoma 180, adenocarcinoma 755, and leukemia 1210. If a compound shows activity against any of these tumors, it then receives further testing against a wider variety of tumors, such as human carcinoma grown in animals or in tissue cluture. It also undergoes extensive animal pharmacological studies before finally being released for trial on humans.

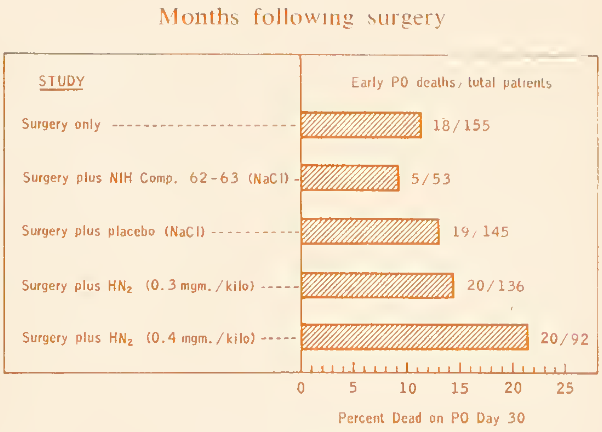

Fig. 2

Bronchogenic Carcinoma

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The first two phases of drug testing in humans are involved with a determination of the human pharmacology, and with a trial of the drug against a broad spectrum of human malignancies. If it is found that the drug can be used with relative safety and that some tumor response is to be expected, the drug is marked for a phase 3, or controlled co-operative clinical study.

The concept of the co-operative clinical study may well be one of the greatest contributions that the C. C. N. S. C. has made to cancer research. A group of investigators, using one treatment protocol and one set of criteria for evaluating results, can accumulate more accurate data in a few months than an individual investigator could in several years. A greater advantage, however, is that statistical supervision is provided, with the result that the studies are designed to yield valid conclusions.

Surgical Adjuvant Cancer Chemotherapy

Following the work of W. Cole,[2] G. Moore,[3] and others demonstrating an increase in the number of cancer cells in the blood following manipulation of a tumor, it was postulated that some of the presently available anticancer drugs, although ineffective in curing large established tumors, might be able to kill the circulating cancer cells before they become implanted, and so decrease the number of post-operative metastases. This was shown to be true in a series of rats.[4]

The Method of Study

A cooperative study among 22 Veterans Administration hospitals was begun in 1957 to test this postulate in patients undergoing surgery for several different tumors, among which was carcinoma of the lung. The patients who underwent a resection for this diagnosis were divided into two study groups. "Curative" cases were those in which there was no clinical or histological evidence of residual cancer, and "palliative" cases were those in which there was histological proof of residual cancer. Nitrogen mustard (mechlor ethamine) was chosen for treatment of bronchogenic carcinoma because of the number of reports of occasional benefits seen with this drug in lung cancer. Table I gives the various dosage schedules that have been used in this study. In the early part of the study, before the chest was closed, the patients were randomized between the treament and control groups by drawing a card which indicated the type of therapy. Later a conversion was made to a "double-blind" study in which the type of therapy was not known to the surgeon. From October 1957 to March 1961 a total of 2,073 patients have been screened for inclusion in this study. The results were first reported by Lee for the group at the annual meeting of the American Medical Association, June, 1960.[5]

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The Results

In Figure 1, the longevity of patients surviving operation is plotted. It can be seen that to date there is no significant difference between the survival period of the control patients treated only by surgery and of those treated with surgery plus nitrogen mustard.

It was found that a full therapeutic course of nitrogen mustard immediately following surgery significantly increased the postoperative mortality rate. Figure 2 is a plot of the 30-day mortality following resection for carcinoma of the lung for each treatment group. Whereas the mortality rate for resection alone was 11.6%, it was 21.7% when nitrogen mustard was given at a dosage of 0.4 mg/kg postoperatively. This increase was not appreciably due to overt bone marrow depression, but rather to an increase in the incidence of severe infections and thromboembolic phenomenon. This increase in the early postoperative mortality rate has been minimized by decreasing the total dose of the drug to 0.3 mg/kg, but this form of therapy cannot be recommended as a routine measure at the present time.

Table I

DOSE SCHEDULES FOR PATIENTS IN THE SURGICAL ADJUVANT STUDY

Full dose (initial study, Oct., 1957, to June, 1958)

Mechlorethamine (HN_2)

0.1 mg/kg. intravenously and 0.1 mg/kg., intrapleurally before wound closure at the conclusion of surgery

0.1 mg/kg. intravenously on each of postoperative days 1 and 2. Total dose, 0.4 mg/kg.

Reduced dose (current study initiated Jan. 1959)

As above, but with elimination of 0.1 mg/kg intravenously at operation. Total 0.3 mg/kg. Maximum 22.5 mg.

(Lee, et al. Arch Surg 82:468, 1961)

Chemotherapy of Unresectable Bronchogenic Carcinoma

X-ray therapy has been and still is the mainstay of palliation for carcinoma of the lung. Even in the best series, however, the median survival period is only six to nine months after therapy.[6] The large number of patients with unresectable cancer of the lung admitted to Veterans Administration hospitals together with the short-term survival of these patients prompted a co-operative clinical study of various drugs in fourteen Veterans Administration hospitals.

The Method of Study

In the first study,[7] five drugs were selected—nitrogen mustard, cortisone, testosterone propionate, diethylstilbesterol, and progesterone—for a comparison with a regimen of maximum supportive care but no specific drug. In several series, nitrogen mustard has been reported to cause

Table 2

Median Survival Times and Estimated Average Survival Times

Survival	Nitrogen Mustard	Diethyl-stilbesterol	Inert Compound	Testoseterone Propionate	Cortisone	Progesterone
Median survival (days)	121	75	93	78	56	60
Estimated mean survival (days)	172	138	138	117	106	122

(Wolf, et al. Am J Med 29:1014, 1960)

occasional regression of tumor masses, relief of superior vena cava syndrome or amelioration of pain due to carcinoma of the lung; testosterone has been reported to partially reverse the cachexia seen with advanced carcinoma. Several clinicians have advocated the use of cortisone because of subjective improvement noticed in a few patients on this drug. Estrogen and progesterone were used because lung cancer is six to seven times as common in men as in women, and the possibility existed that this higher male susceptibility might be due to the sex hormones.

Except for nitrogen mustard and testosterone propionate, the drugs were given, using a double blind technique. Nitrogen mustard was given in a single dose of 0.4 mg/kg body weight and then repeated in six weeks. One hundred mg of testosterone propionate was given three times a week for 12 weeks. Cortisone was given in a dose of 100 mg a day, progesterone 2 mg a day, and diethylstilbesterol 10 mg a day, each for 12 weeks. All of the patients in this study were deemed incurable by any known method of therapy.

The Results

The results of this study are given in table 2. The median survival period of those patients placed on the inert compound was approximately three months, while for the patients placed on cortisone it was 56 days. The probability that this difference would result from chance alone is less than five per cent. The reason for the shorter survival period of the patients on cortisone is not known; however, in animal studies it has been demonstrated that cortisone may cause an increased number of metastases from a tumor at a time when the tumor itself is decreasing in size.[8]

The experience with nitrogen mustard was only slightly better than with the inert compound. The insignificance of this difference has been emphasized by further studies in which essentially no difference could be found between the survival period of those patients given nitrogen mustard and those given the inert compound. With the three sex hormones results were intermediate between those for nitrogen mustard and those for cortisone, not significantly different from those for the inert compound.

Comments

If there is any complacence among persons working in this field, studies such as these should dispel it. Although the results are discouraging, we can still feel some encouragement, for there is a new sense of urgency concerning cancer. Support for various types of cancer research is easier to obtain, and the number of people working in this field has increased several fold. It has often been stated that if a cure for cancer is found, the elaborate machinery described here will not be necessary to prove it; but until such a drug or procedure is found, studies such as these will be necessary to serve as guide posts to the direction our research should take.

Summary

Two co-operative clinical studies on cancer of the lung are being done by Veterans Administration hospitals. The results with cancer chemotherapy used as an adjuvant to surgery have as yet shown no increase in the cure rate of this disease, but on the contrary have revealed an increase in the postoperative mortality. The several compounds used to treat unresectable cancer of the lung have not given prolongation of life; instead, the use of cortisone has resulted in a significant decrease in the survival time of these patients.

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"The only thing we have to fear . . . is fear itself."

Franklin D. Roosevelt (1942)

Management of Acutely Disturbed Patient

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THE OUTSTANDING feature of a situation wherein a physician is asked to manage an acutely disturbed patient is fear. Not only is the patient frightened but the other persons about him, including the physician, are apt to be experiencing extreme anxiety. Whenever any human being expresses inordinate emotion or displays behavior that is grossly aberrant or uncontrolled, he incites marked apprehension in those about him. Some of this fear may be justifiable, for there is some danger that the person may actually harm himself, another person, or property; but such is not often the case and few disturbed patients are so uncontrolled as to be really dangerous. In addition, some of the apprehension derives from being unable to understand such behavior or from not knowing how to control it. Quite likely the physician is called to attend the patient, because various people, such as relatives or police, have become alarmed; they are frightened and demand that the doctor *do something immediately*. The physician is then placed in a very anxiety-provoking situation, not in itself an unusual position for a doctor; but if he has no definite idea what to do, he may become distraught, and this will certainly impair his judgment. Furthermore, this urgency and apprehension may very well make matters worse for the patient, for he will certainly react unfavorably.

The Evaluation

In almost all instances of acute disturbance, a fundamental etiologic factor is that the patient himself is very frightened or even panicky. This is due to failure of cognition, or integration of his intellectual capacities, as is the case in functional psychosis, or there may be disorders of perception, recall, or emotional control, as in the organic disturbances. In either instance the patient's view of his environment is bewildering or threatening, and he may become terrified. His aberrant behavior is usually an attempt to defend himself against imagined threat. Although the underlying feature may be fear, the outward manifestations observed by the physician may be rage, erratic excitement, paranoid delusions, mute immobile withdrawal, or an attempt at self-injury. In addition, the patient may actually be afraid of what is happening to his mind, and due to his own realization that his behavior is aberrant, he may fear loss of self-control. Also, as he may be fearful that the physician or the police will incarcerate him against his will, it is therefore difficult for him to trust the doctor.

The Management

In managing these patients perhaps the first thing to do is "nothing." In my opinion the frantic sense of urgency on the part of the physician and others is usually detrimental to the situation.

With everybody demanding that the doctor "do something" and he himself being apprehensive about what is going to happen and what he is to do, the danger of a hasty, ill-judged action, with a similar response on the part of the patient, is too great. Therefore, I strongly recommend that the physician, whenever possible, just stand or sit, by or near the patient, and endeavor to engage him in a conversation; one characterized more by listening on the doctor's part. This will do much to allay anxiety on the part of both; the patient may be distracted from his fears, and the physician's decision about doing something can be deferred. Also this allows the doctor and the patient to get to know each other and to establish some rapport. If the doctor can, by being calm and reasonable, gain some trust, he may well get the patient's cooperation.

To establish trust, it is of the greatest importance that the physician be completely honest. Any deception, although it may appear expedient at the moment, is absolutely contraindicated, for it will completely destroy the relationship not only with the referring physician but also with anyone else who tries to follow through. The doctor should be so honest as to not even agree with the patient's delusions or hallucinations.

The Patients Viewpoint

First the observer should attempt to discover what is frightening or disturbing the patient. In other words, "how does the patient see his environment." What is causing his aberrant emotions and behavior? Instead of attempting a disputation of the patient's unrealistic notions, the doctor should try to "draw out" the patient in order to better understand his motivations. Furthermore, if he has knowledge of the patient's unrealistic perceptions, the doctor is in a far better position to offer specific reassurances.

Functional Disturbances

In addition to determining what disturbs the patient, the doctor should attempt to discern whether the disturbance is functional or organic, for the management of these will differ. In both instances you may see inordinate emotion, such as excitement or rage or panic, and evidence of extreme deviations from reality-testing, such as hallucinations or delusions. In functional disorders the patient is more apt to retain his orientation as to time, place and person; there is no evidence of marked intellectual deficit or memory loss; and the patient's delusions are inclined to be "systematized" and to make some "psychodynamic sense"; for they are usually a psychological defense mechanism against some conflict. For that reason they are rigidly adhered to and any attempt at contradicting them is apt to make the patient angry.

Organic Disturbances

In the organically-disturbed patient one sees confusion and disorientation in time, place, and person, with evidence of intellectual impairment and memory loss. He will be unable to clearly relate the circumstances surrounding his predicament. Further, his hallucinations or delusions may change from moment to moment; he may not rigidly adhere to them, for there is no psychological "need" to keep them. There is often a fluctuation, not only in the mental content, but also in the emotional reaction, which may be quite labile and subject to sudden change. This can be an advantage for the physician, because such patients are often amenable to reassurance and may be distracted by discussing a neutral topic. Exceptions to this would be cases of organic syndrome of an "irritative" nature, such as psychomotor seizures or intoxication with CNS stimulants, where the patient may be completely out of contact and not in the least amenable to any interpersonal influence.

Medication

After establishing some rapport and gaining an idea of what is distrubing the patient, the first step is usually to get him to assent to some medication. It is wise to do this before discussing any further plans, such as hospitalization, because if he is extremely agitated, it is all the more difficult to reason with him. Often the patient is afraid that the medication will be in a dose sufficient to render him unconscious and totally helpless. He may desire some help in controlling himself but doesn't want to lose all self-control. In my opinion, to "knock out" a patient is usually not only unnecessary but ill-advised. It is important that one attain and retain a trusting doctor-patient relationship;. medication to the point of sleep does not serve this end. In addition, there is the difficulty of determining a proper dosage, especially if there is uncertainty whether the disturbance is organic or functional. Generally under these circumstances, I give 3¾ to 7½ or more grains of Amytal intramuscularly and continue to sit with the patient until he is quiet. If this is not available, a quarter grain of morphine is generally an adequate substitute, especially if the patient is to travel. After he is quieted somewhat it is helpful to give an intramuscular phenothiazine, such as 25-50 mgm. of thorazine and thus begin the tranquilizer regimen. The blood pressure should be observed and the patient watched for hypotensive reaction; if there is none, the dose can be repeated in an hour or so. At Minneapolis General Hospital, we have found it very helpful to employ the synergism between a barbiturate and a phenothiazine. We start with relatively large doses of barbiturate and then diminish the dosage as we rapidly increase the phenothiazine over the next two days. In patients inclined to become disturbed we usually continue with a small amount of phenobarbitol, perhaps two to three grains. Not only does this reduce the complications encountered when a large dose of either drug is used alone; but also the combination is very potent. I might add that we use a similar regimen in the treatment of delirium tremens.

In most instances such an episode should be followed by at least a brief period of hospitalization for continued treatment and observation. This does not necessarily have to be in a state hospital or even a hospital with psychiatric service. Experience in general hospitals throughout the country has indicated that it is quite feasible to care for acute psychiatric illnesses in settings not primarily designed for such cases. Patients are more inclined to be cooperative about hospitalization if they do not foresee some stigma being attached to it and if it is on an open ward where they can be shown respect and are not regarded as "insane".

The doctor should always *invite* the patient to take medication or enter the hospital. In order to retain the patient's self-respect and to avoid having the patient react to the physician as an authority to be defied.

The Use of Force

If the patient remains adamant, however, and the physician has decided that medication or hospitalization is indicated, he must then firmly and unequivocally state that it is his intention to use force if necessary. He should not make this declaration, however, unless he has prearranged to have other persons available to help him, preferably a strong man or two, one of whom is a relative. By having other persons available, it often becomes unnecessary to use them; the mere presence of these others plus the unwavering determination of the physician will often cause the patient to submit to medications or transportation to the hospital. It is helpful to give the patient the impression that he is voluntarily choosing to submit, for he can thereby save face. Another reason for the physician to be absolutely firm is that vacillation and uncertainty will greatly augment the patient's anxiety. If a firm decision is made, that alone will often reduce the patient's apprehension. I repeat: frequently these patients themselves desire some control, even though they rarely admit this explicity.

The Legal Status of the Doctor

It is important that the doctor becomes conversant with the laws and procedures involved in compelling hospitalization or medication of a patient without his consent. The use of force could be justification for an assault and battery suit; but I think this is exceedingly improbable if the doctor carefully documents the signs and symptoms of aberrant behavior and mentation upon which he bases his action, especially if he has the concurrence of members of the family or other responsible persons. If the patient has been admitted to a hospital under physical or pharmacologic restraint, the doctor can retain him there for only a matter of hours without legal authority. Therefore he should as soon as possible transfer to the local probate court the responsibility for holding the patient against his will by filing for a hold order at the earliest possible moment with the assistance of relatives. This does not mean that the physician or the relatives are *committing* the patient; they are merely raising the question of need for commitment and requesting that the patient be held for a period of observation. In order to gain the relatives' co-operation, it is often necessary to clarify to them that it is the *court* and not *they* who make the commitment; for they are often hesitant to take any action for fear that they will be accused of "putting away" a relative. In no instance should any patient be kept under restraint for more than two or three days without legal authority.

Bacteremic Shock

due to

Gram-Negative Entero bacilli

All clinicans inevitably must deal with problems of bacteremic shock. The author presents an extensive review of the subject based on a comprehensive evaluation from a large series of patients. Arteriopressor agents and combinations of antibiotic therapy formed the keystone of therapy in this study.

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THE DESIGNATION "bacteremic shock" refers to peripheral vascular collapse, the essential manifestation of which is hypotension, complicating an infection of the blood stream.

Although shock is emphasized herein as complicating bacteremia due to gram-negative enterobacilli, it of course may complicate other infections. Shock occurs in nonbacterial infections: viral (hemorrhagic fever), rickettsial (Rocky Mountain spotted fever), and parasitic (malaria). Shock also is encountered in nonbacteremic bacterial infections, such as cholera, shigellosis, and clostridial infections. Further, it complicates other bacteremias, such as staphylococcemia, meningococcemia, and typhoid fever.

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Experiences with bacteremia due to gram-negative enterobacilli have been reported periodically by members of our group.[1-15] We recently reviewed all cases of bacteremic shock due to gram-negative enterobacilli observed at the Mayo Clinic in the period January 1, 1940, through June 30, 1961.[15] In this period 303 patients with bacteremia due to gram-negative enterobacilli were observed, and 59—approximately one in five—had bacteremic shock.

Criteria for Selection of Cases

Bacteremic shock due to gram-negative enterobacilli is said to be present when the case at hand fulfills the following criteria: (1) a sustained, often precipitous, drop in systolic blood pressure to 80 mm. of mercury or below, (2) gram-negative enterobacilli recovered from blood cultures obtained during the hypotension, and (3) a clinical picture compatible with bacteremia, and other causes of shock excluded.

Physiopathologic Considerations

Some types of shock occur in the absence of blood or fluid loss from the vascular system. Normal blood pressure reflects a satisfactory relation of vascular capacity to blood volume; significant change in either of these variables is reflected by a change in the blood pressure. When vascular capacity is increased by dilation of the vessels, blood is sequestered therein and diminished amounts are returned to the heart. Incomplete cardiac filling results in reduced cardiac output, hypotension, and diminished arterial blood flow.

The endotoxin of gram-negative enterobacilli is a phospholipid-polysaccharide-protein complex of high molecular weight; the polysaccharide provides antigenic specificity, while the lipid fraction purveys toxicity. On experimental administration, the effects of endotoxin are numerous, including the hemodynamic, pyrogenic, leukothrombopenic, leukocytic, and others. Endotoxin apparently acts indirectly on blood vessels through the medium of an unknown component in blood, perhaps a fraction of the serum proteins. Microcirculatory observation reveals that the blood-endotoxin product induces tetany-like activity of the vascular bed near the arteriolar level. Initially vasoconstriction predominates, but alternating vasodilatation of progressive duration eventuates in vascular atony, stagnation of blood in the peripheral capillary beds, and consequent shock. Anuria manifests the decreased renal plasma flow and glomerular filtration.

Endotoxemia also induces initial hyperglycemia which apparently reflects release of epinephrine, but hypoglycemia follows because of decreased liver glycogen. Anoxia prevents normal cellular metabolism, and anaerobic cellular reactions dominate. Formation of phosphoric acid and other acid metabolites eventuates in metabolic acidosis. The anoxic cells may release excessive amounts of potassium, resulting in hyperkalemia. Rising aminoacidemia may manifest the anoxic liver's inability to metabolize the increased load resulting from tissue breakdown.

In endotoxin shock, various substances including histamine, serotonin, acetylcholine, polypeptides such as bradykinin, and catecholamines have been investigated as possibly participating in the vasoconstrictor response. A variety of drugs including antihistaminics, serotonin antagonists, tranquilizers and adrenolytic agents may inhibit the experimental response. As therapy, these latter are valueless, however, in human shock. Endotoxin shock has been produced subsequent to decapitation, vagotomy, and chordotomy, apparently excluding the central nervous system from responsibility for the response. Neither experimentally nor in humans is there evidence of adrenal failure, even when the subject is moribund.

Differences between the reactions in animals and those in man may have obscured the action of the liver in bacteremic shock. The intense spasm of hepatic veins with pooling of blood in canine livers apparently is not duplicated in man. In dogs an intact liver is required for the induction of classic exotoxin shock, and in hepatectomized dogs one cannot induce the complete phenomenon; contrawise in the human, an intact liver may be protective against bacteremic shock, and liver disease appears to predispose to the phenomenon. In man the liver appears to be a highly important agent for clearing gram-negative bacteria and endotoxin from the blood, and, hepatic disease apparently increases the subject's susceptibility to gram-negative bacteremia, bacteremic shock, and the effects of endotoxin.

Necropsy findings in human victims are meager. Renal tubular or cortical necrosis, like intestinal necrosis and hemorrhage, may represent ischemia. Slight hepatic congestion may reflect anoxia, overburdening of the circulation by parenteral fluids, or terminal heart failure.

Pathogens, Patients, and Portals

Causative Microorganism

Most commonly the gram-negative enterobacilli causing shock are coli-aerogenes organisms. However, proteus, pseudomonas, and bacteroides organisms also cause bacteremic shock. Uncommon pathogens, such as Bacillus subtilis, achromobacter, and alkaligenes organisms may be causative, especially in patients having certain hematologic diseases.

Age and Sex

Usually bacteremic shock attacks people 60 years of age or older, about three quarters of whom are men. Other susceptible groups are women in the postpartum state or undergoing septic abortion, and children having malignant and hematologic diseases.

Portal of Entry and Precipitating Event

The portals of entry are genitourinary in about 70 per cent of cases. Three instances in four follow urologic operation or manipulation, which perhaps explains why older men predominate among the patients. Gastrointestinal portals, including the biliary, are implicated in about 20 per cent of cases, usually postoperatively; and the portal of entry is elsewhere or inapparent in about 10 per cent. An inapparent portal is characteristic in patients with underlying hematologic disease. Other portals that have been implicated in pseudomonas bacteremia include the skin (extensive burns), eye, lungs, spinal canal, and veins; these portals share the possibility of exposure to contaminated instruments and medications (ointments, "mist" preparations, solutions). We have no empiric knowledge of bacteremia wherein the infection reflected transfusion of contaminated blood.

Possible Predisposing Factors

Nidi of infection, as exemplified by pyelonephritis and cholangitis, are more obvious sites from which bacteremia may originate. Less well appreciated are other conditions that may enhance invasion of the blood stream.

Noninfectious Diseases

Noninfectious diseases apparently predisposing to bacteremic shock include (1) advanced arteriosclerosis, (2) malignant neoplasms, (3) certain hematologic diseases (leukemia, lymphoma, myeloma, agranulocytosis or aplasia), (4) diabetes mellitus, and (5) cirrhosis.

Hall and Gold[16] noted a relatively high incidence of arteriosclerosis and its vascular complications in their patients, and our experience is corroborative. This may be because many victims of strokes and patients undergoing surgical treatment (abdominal aneurysm, peripheral gangrene) require indwelling catheters. Infected peripheral gangrenous tissue itself may serve as a portal of entry. This same group of patients has a high incidence of other predisposing diseases, such as diabetes.

Not rarely, neoplastic disease is complicated by local infection; but since general resistance is not grossly diminished, bacteremia is uncommon in the absence of iatrogenic precipitating procedures such as surgery, chemotherapy, radiation therapy, intravenous therapy, and so on.[11]

Diminished resistance to bacteremia in certain hematologic diseases may be due to (1) defects in gamma-globulin (chronic lymphatic leukemia, lymphoma, multiple myeloma), (2) inadequate polymorphonuclear response (acute leukemia, chronic granulocytic leukemia, aplasia, or agranulocytosis), or (3) iatrogenic factors (adrenal steroid, antimetabolite, antibacterial measures, and radiation therapy).[11]

Among diabetics the portal is almost always urinary, and about 50 per cent of the infections follow urologic operation or manipulation. Diabetic complications, such as coma, cesarean section, and amputation, which frequently require urinary catheterization, further predispose these patients to bacteremia.[8,10]

Theoretically, abnormalities in circulating immunologic mechanisms associated with hepatic disease may lessen the ability of the reticuloendothelial system to contain and destroy bacteria. Persistent bacteremia might result from reseeding of the circulation with viable microorganisms that previously had been phagocytized therein, but not killed.[17] In this situation the number of Kupffer's cells and their ability to phagocytize bacteria seem to be normal, but the reticuloendothelial cells, including those of the liver, may lack the ability to destroy the ensnared organisms. The possibility that the infection originates by transport of intestinal bacteria—via the portal vein (the damaged liver being incapable of filtering them) or via collateral vessels bypassing the liver—to contaminate the general circulation seems negated by the rarity of bacteremia in patients having portacaval anastomoses. Perhaps infectious nidi in the biliary or urinary tract, especially if disturbed by surgical or manipulative procedures, are the portals for bacteremia, persistence of which is possible because of this postulated defect in liver-dependent immunologic mechanisms.[7,14] Heyman and Beeson[18] found that subjects with chronic hepatic disease have an increased susceptibility to the pyrogenic action of endotoxin; Bennett and Cluff[19] have suggested that these patients are more susceptible to the lethal action of endotoxin.

Predisposing Therapy

Kinds of therapy apparently predisposing to bacteremic shock include (1) operation on or manipulation of the genitourinary or gastrointestinal tracts, (2) adrenal steroids, (3) antibacterials, (4) antimetabolites, and (5) irradiation.

Elaboration concerning possible predisposition to infection by exogenous adrenal steroids exceeds the scope of this presentation. Contrary to some experimental data, our experiences indicate that prior use of adrenal steroids, as in patients having certain hematologic diseases, fails to protect the patients against bacteremic shock or fatal outcome therefrom.

Just as tetracycline depresses the gram-negative elements of the normal flora and allows unopposed overgrowth of resistant strains of Staphylococcus aureus, penicillin and allied drugs depress the gram-positive elements and permit overgrowth of gram-negative enteric bacilli. With their natural antagonists among the flora eliminated, the gram-negative bacilli grow unopposed and may invade sites normally forbidden to them, including the blood. When bacteremic shock supervenes in patients receiving antibacterials such as penicillin, which depress the gram-positive elements of the normal flora, coli-aerogenes organisms usually are implicated. If prior antibacterial therapy (sulfonamides, penicillin-streptomycin therapy, and so on) has depressed both elements of the flora, proteus and pseudomonas organisms frequently are responsible.

Bacteremic shock associated with hematotherapy (adrenal steroids, antimetabolites, radiation) is commonly due to pseudomonas organisms, but the basis for this bacterial diathesis is obscure.

Clinical Features

Prodromata

Possible prodromal indications of bacteremic shock include (1) chilliness, (2) vague myalgia, suggestive of an influenza-like syndrome, (3) mental aberration, restlessness, and agitation, (4) vomiting and diarrhea, perhaps suggesting staphylococcal enterocolitis, and (5) leukopenia shortly replaced by leukocytosis.

Synoptic Symptomatology

The symptomatology of bacteremic shock is synopsized by the crisscross of climbing temperature and pulse rate and declining blood pressure and urinary output.

Two Symptomatic and Prognostic Stages

In the first stage, wherein the prognosis is better, the subject is alert but often restless and has warm, flushed skin, full and bounding pulse, progressive pyrexia, and moderate hypotension; but urinary output is maintained. In the second stage, wherein prognosis is graver, the subject is pallid and has cold, damp extremities, collapsed superficial veins, feeble pulse, perhaps declining temperature, shallow hyperpnea, marked hypotension and oliguria. Ominous manifestations are cyanosis of the acral parts, cutis marmorata, Cheyne-Stokes respiration, gallop rhythm, hypothermia, hypotension refractory to vasopressors, dilated and sluggish pupils, hyporeflexia, coma, jaundice, progressive azotemia, and anuria.

In the first stage, signs of infection dominate those ordinarily indicating shock; at this stage, hypotension may be the sole physical manifestation of a potentially lethal situation. If the process is identified in the first stage and treated promptly, these paradoxical signs may not be replaced by those more characteristic of shock. Supervention of pallor, collapse of veins, hyperpnea, weakness of pulse, and curtailment of urinary output indicate increasing peripheral stagnation with decreasing venous return and cardiac output.

Influence of Associated Diseases

When a patient has disease of the urinary or gastrointestinal tract, or recently has had any operation or manipulation affecting either, one should be constantly aware of the possible supervention of gram-negative bacteremia and shock. By detecting hypotension in likely candidates, one may on occasion predict the positivity of blood cultures.

While prolonged hypotension and renal ischemia can cause progressive renal failure, they are abetted by any prior renal damage. In chronic urinary infection complicated by bacteremic shock, it often is difficult at first to determine whether azotemia reflects chiefly the complication or terminal renal insufficiency due to the primary nephropathy. It may be that the prognosis is graver in chronic urinary infection because either the hypotension precipitates terminal renal insufficiency resulting from the primary disease or the previously damaged kidneys fail to recuperate with sufficient rapidity. One should be especially wary of this in diabetics with urinary infection. Compromising of the kidneys by the twin factors of chronic infection and acute ischemia may explain the observation that bacteremic shock is of graver prognosis if associated with a urinary portal rather than another entry. In the latter circumstance renal function, necessary for recovery, is more likely to remain intact or to be restored sufficiently in the period of grace by vasopressors, so that antibacterial therapy is given the opportunity of eradicating the infectious process. The function of kidneys previously damaged by infection may not be restored in the same period of therapeutic grace.

Likewise, severe hepatic disease predisposes to bacteremic shock and seems to hinder recovery. And, as increasing azotemia may manifest the further insult to previously damaged kidneys, the addition of vascular collapse to hepatic disease may result in increasing aminoacidemia and jaundice.

Arteriosclerosis, with underlying nephropathy and hepatic disease, completes the triad of diseases that appear to predispose to bacteremic shock and also to impede the patient's recovery from it. The already damaged vascular system appears to be handicapped in its ability to recover within the usual period from the additional hemodynamic insult. As in patients with underlying nephropathy and cirrhosis, so in those with arteriosclerosis, procedures further enhancing bacteremia are to be avoided if at all possible, and prompt detection and treatment of shock are vital needs.

A shocklike state in a diabetic can be confusing; in addition to bacteremia, possible causes include acidosis, hyperinsulinism, cerebrovascular accident, and meningitis. Physical examination with emphasis on use of the thermometer and sphygmomanometer may provide the diagnosis before report of laboratory procedures.

In hematologic diseases, if blood loss, anaphylactoid reaction to medication, and interruption of steroid therapy can be eliminated as causes of sudden hypotension, bacteremic shock is likely. There are several unusual characteristics of bacteremia complicating hematologic disease: the portal is inapparent in about two thirds of cases, polymicrobic infection is not rare, and pseudomonas organisms as well as those that otherwise are less frequently implicated in bacteremia (B. subtilis, alcaligenes, achromobacter, and so on) may be responsible.

Determination of Causes

Failure of seemingly appropriate therapy to correct the presumed cause of acute vasular collapse, as when postoperative hypotension does not respond to blood transfusion, should bring bacteremic shock to mind.

In those predisposing conditions that are associated with either primary fever cirrhosis, acute leukemia, lymphoma) or fever due to localized infections such as pyelonephritis, the sphygmomanometer may be more helpful than the thermometer in differential diagnosis.

When bacteremic shock complicates septic abortion one considers clostridial infection, but gram-negative enterobacilli commonly are responsible; previously obtained smears and cultures of the cervix may aid in this distinction prior to reports on blood cultures.

Pseudomonas organisms are suspect when bacteremic shock follows such procedures as blood transfusion, intravenous medication, cardiovascular operations, use of a heart-lung machine, prolonged cystoscopy, treatments for extensive burns, and mist therapy using tap water as a vehicle. Their contamination of medical instruments and solutions may make these so-called water bacilli the most common exogenous cause of the complication. As aforementioned, pseudomonas bacteremia should be suspected also in patients having predisposing hematologic disease and in those in whom the complication follows use of antibacterial agents depressing both elements of the bacterial flora (penicillin-streptomycin, sulfonamides). Axillary and anogenital ulcerative lesions (ecthyma gangrenosum), leukothrombopenia, jaundice, and black-green coloring of fingernails and toenails suggest pseudomonas etiology. One should beware of confusing bacteremia-induced leukothrombopenia with pseudomonas bacteremia complicating underlying hematologic disease.

Bacteroides organisms are suspect when bacteremic shock seems probably present but blood cultures remain negative; in such cases one should retain anaerobic cultures at least three weeks before abandoning suspicion of these slow-growing bacteria.

Bacterial Susceptibility to Antibacterials

In Vitro

For the most part, in vitro susceptibility of the organisms to various antibiotics has only retrospective value in the management of bacteremic shock, because therapy is initiated empirically before such findings are available and ordinarily is not changed afterward if the patient is doing well. To postpone therapy until the results of in vitro susceptibility tests were available would mean delay of 24 to 48 hours, and an increased mortality rate. Our experiences with bacteremic shock due to gram-negative enterobacilli indicate that mortality, when correlated solely with the causative bacteria, varies appreciably with the bacterial species responsible. About two thirds of patients having E. coli, proteus, or bacteroides infections recover, but only about half of those infected with A. aerogenes or pseudomonas organisms survive.

Clinically

Despite the high degree of in vitro resistance displayed by proteus organisms, if the patient is free of an associated disease which foredooms him, recovery with tetracycline-streptomycin therapy is almost invariable. We have observed this somewhat unorthodox but welcome phenomenon for several years,[1] and continue to lack an adequate explanation for it.

When pseudomonas infection is associated with renal, hematologic, or neoplastic disease, it is almost invariably fatal; otherwise 50 per cent of patients recover with polymyxin therapy, and patients have recovered after treatment with tetracycline-streptomycin.

Of patients infected with coli-aerogenes organisms resistant to tetracycline and streptomycin, 50 per cent recover after use of those agents. The recovery rate is 10 to 15 per cent higher if antibiotics to which the organisms are sensitive have been given. It is for this latter reason that, if the patient is not doing well approximately 12 hours after initiation of empiric therapy, or if a similar situation prevails after in vitro susceptibility tests are reported, one considers changing the antibacterial regimen.

Therapeutic Considerations

Management of bacteremic shock includes (1) close scrutiny of potential candidates, since prompt detection and treatment considerably decrease the mortality; (2) restoration and maintenance of blood pressure by vasopressors; (3) initiation of therapy with empirically-chosen antibacterials (usually tetracycline-streptomycin) before cultures of blood are completed; and (4) use of miscellaneous measures such as shock postion and leg bandaging, administration of oxygen, and careful control of fluids, protein metabolism and electroyte balance. Consideration of hemodialysis arises in patients having renal shutdown. Primary nidi of infection and sites of metastatic suppuration may require surgical attention. Hypothermia is of potential application.[20, 21]

Recognition

Since the most common precipitator of bacteremic shock due to gram-negative bacilli is some type of urethral manipulation, including catheterization, likely victims should be managed accordingly. Increase of temperature and pulse rate associated with decrease of blood pressure and urinary output in such patients dictate the need for empiric therapy after obtainment of samples for culture of blood and urine, if no other explanation is immediately forthcoming. Patients with underlying renal, hepatic, or vascular disease should be observed closely, since they appear less able to tolerate superimposed anoxia and their period of reversibility seems shorter.

Vasopressors

Early use of effective vasopressors is essential, not only to forestall irreversible shock but also to restore circulation before ischemia has damaged the kidneys, producing renal shutdown. The longer the hypotension, the more likely is renal damage.

Metaraminol (Aramine), unlike levarterenol (Levophed), can be given intramuscularly as well as intravenously. It has been described as being less likely to result in dependence with reflex hypotension on withdrawal and is said to promote renal blood flow more strongly. Despite these comparative disadvantages and the more objectionable one of being more apt to cause tissue necrosis on extravasation, levarterenol has not been completely displaced in clinical practice, since it will maintain the blood pressure of patients refractory to metaraminol.

Levarterenol is given intravenously in doses of 4 ml. of a 1:1000 solution (0.5 mg.) in 1000 ml. of parenteral fluid (usually 5 per cent dextrose in distilled water) at a rate sufficient to maintain the blood pressure at the desired level. If one uses a Y-tube apparatus to deliver the levarterenol, one can discontinue administration of the vasopressor periodically so that only the minimum is consumed, and yet the solution remains immediately available if hypotension recurs. Similar exactness of titration is not possible with intramuscular administration of vasopressors. Empirically it seems wise not to attempt to raise the systolic blood pressure above 100 mm. of mercury in a previously normotensive patient.

Antibacterial Therapy

In patients suspected of having bacteremic shock due to gram-negative enterobacilli, tetracycline-streptomycin therapy usually is given empirically. After blood has been obtained for cultures, if circulatory collapse appears not so severe as to prevent oral absorption, 500 to 750 mg. of a tetracycline is given by mouth every six hours. Chloramphenicol may be given orally in amounts of 0.5 to 1 gm. every four hours if staphylococci are also present (furunculosis) or if super-infection with them seems especially likely. Again, chloramphenicol may be substituted if there has been inadequate response after about a 12-hour trial of tetracycline, or if in vitro data later indicate greater susceptibility to chloramphenicol and there has been poor response to the tetracyclines.

Under this double circumstance kanamycin or polymyxin B may also be substituted for streptomycin, or the latter may be given alone. In addition to its effect against pseudomonas organisms, occasionally polymyxin B has proved efficacious in some infections due to bacilli other than pseudomonas, such as coli-aerogenes organisms. If circulatory collapse appears too marked to allow oral absorption, a tetracycline is given intravenously in amounts of 500 mg. every eight to 12 hours. One half to 1 gm. of chloramphenicol sodium succinate can be given intravenously every six to 12 hours. One gram of streptomycin —or of kanamycin if associated staphylococcal infection or refractoriness appears to dictate— is given intramuscularly every 12 hours. Fifty milligrams of polymyxin B is given intramuscularly every six hours. If renal function is impaired, less than the usual amount of streptomycin, kanamycin, or polymyxin B is given. Since shock may hinder intramuscular absorption, one prefers not to depend further on this route for the administration of the tetracyclines or chloramphenicol.

In cases of vascular collapse likely due to gram-negative enteric bacilli, empiric administration of streptomycin-tetracycline after obtainment of blood for cultures appears preferable for several reasons. Since identification of bacteria and results of inhibition tests will not be available for one or more days, the broader antibiotic coverage is desirable. Of the potential pathogens, none are entirely unresponsive to the regimen, and it appears to be the most effective regimen against E. coli, the organism most commonly responsible for the infection. An enhanced effect may be obtained from the bactericidal action of streptomycin, since the tetracyclines alone are bacteriostatic. In our experience the regimen is associated with a comparatively lower mortality rate.

There are disadvantages possibly accruing to the empiric use of tetracycline-streptomycin therapy, but these are possible also with alternative antibacterial regimens. The disadvantages include the dual depressive effect on the gram-negative elements of the flora, making superinfection more likely. Streptomycin, kanamycin, and polymyxin B are nephrotoxic; streptomycin and kanamycin are also ototoxic; polymyxin B may cause cerebellar ataxia. In bacteremic shock, with the ever present danger of renal inadequacy, these drugs should be used cautiously, since accumulation of them in the blood strengthens their neurotoxic effects.

Periodic study of smears and cultures of the sputum and stools during antibacterial therapy may reveal change in the flora and impending superinfection.

Occasionally, though empiric therapy is sufficient to prevent death, the response is incomplete; then microbiologic data may indicate use of a single agent. Single agents having possible application against certain gram-negative bacilli include (1) polymyxin B in pseudomonas infections, (2) penicillin or novobiocin in proteus bacteremia, (3) chloramphenicol in salmonellosis, (4) chloramphenicol or sometimes erythromycin in hemophilus infections, and (5) a tetracycline in bacteroides infections.

Our limited experiences to date have not demonstrated the exact applicability of colistin (Coly-Mycin) in bacteremia from gram-negative organisms, including pseudomonas.

As a generalization, antibacterial therapy should be continued after control of shock until the patient has been afebrile 72 hours and three successive blood cultures have been negative. If the patient appears to be doing well, the empiric antibacterial therapy is not changed despite contrary indications from susceptibility tests, when their results become known in 24 to 48 hours.

Miscellaneous Measures

Oxygen therapy seems indicated for attempts to counteract tissue anoxia resulting from the reduced arterial blood flow.

Elevating the foot of the patient's bed ("shock position") and bandaging of his lower extremities are mechanical measures designed to increase venous return to the heart and consequent cardiac output.

If hypothermia is not used, the patient may be kept comfortably warm; but overheating is to be avoided. Overheating may induce dilatation of superficial vessels and further increase the capacity of the vascular bed.

In patients suffering renal shutdown, usually the first sign of reversibility is reappearance of excretory function within 10 to 12 days. Excretory function reappears before regulatory function, and death with progressive azotemia and acidosis despite diuresis remains possible.

Hemodialysis[22] has contributed[1] significantly to maintaining life and reducing morbidity during the oliguric phase of renal shutdown. It should not be reserved as a last desperate measure; its failure to prevent death may reflect belated use. Persistent oliguria may necessitate repeated hemodialysis.

Occasionally excision or surgical drainage of the source of infection is indicated; one attempts to bring the bacteremia under control before subjecting the patient to such added stress, but occasionally bacteremia persists until the primary nidus of infection has been extirpated surgically. Sometimes metastatic suppuration demands surgical attention.

Hall and Gold[16] noted that steroids did not lessen shock in their patients, thereby confirming experimental work of Borden and themselves that indicated cortisone did not prevent exotoxin shock in dogs. As aforementioned, neither experimentally nor in humans is there evidence of adrenal failure, even when the subject is moribund.[23] Hall and Gold[16] also noted that the whole blood, plasma, or dextran did not improve the outcome in their cases. Our conclusions regarding these attempts at therapy are similar. Because the mortality among our patients is about half that in some series employing steroids, we have not attempted to use steroids. Also we have not used blood, plasma, or dextran because in bacteremic shock there is no decrease of blood volume, but rather stagnation and redistribution of it.

In a series of 59 patients recently reported on by members of our group, adherence to the above principles was associated with a mortality rate of 37 per cent.[15]

Prognostic Considerations

Half-hourly determinations of the patient's blood pressure and records of his urinary output appear to be the best routine objective indices of progress and outcome.

Prognostic considerations and evaluation of therapeutic regimens should include analysis of associated conditions, since in about three fourths of fatal cases bacteremic shock appears to have been but a terminal event in a potentially lethal situation.[15]

The mortality rate is higher when the portal is urinary than when it is intestinal, and roughly parallels advancing years. While bacteremic shock is of lower incidence in women, the over-all rate of death among them may be comparatively higher. The outlook generally is worsened by serious underlying infection such as pyelophlebitis, multiple renal abscesses, and so on, destruction of the normal body flora by prior antibacterial therapy, and prolonged duration of shock before its detection and the initiation of restorative measures. Complications of the bacteremia and shock may on occasion determine the outcome renal shutdown, metastatic infection, superinfection, and such developments may bring death.

Summary

In recent years at the Mayo Clinic, shock has supervened in at least 20 per cent of cases of bacteremia due to gram-negative enteric bacilli. In about two thirds of cases the causative organism was coli-aerogenes, the portal of entry was genitourinary, the patients were men, the age was 60 years or more, and recovery eventuated. Bacteremic shock may present signs such as warm flushed skin, full-bounding pulse, fever, and alertness, which ordinarily are not associated with shock due to other causes; only hypotension may corroborate supervention by this potentially fatal complication.

Noninfectious diseases predisposing to bacteremic shock include (1) advanced arteriosclerosis, (2) neoplasms, (3) certain hematologic diseases, (4) diabetes mellitus, and (5) cirrhosis. Therapies predisposing to bacteremic shock include (1) operation on or manipulation of the genitourinary or gastrointestinal tract, (2) administration of adrenal steroids, antibacterials, or antimetabolites, and (3) radiation treatment. Underlying nephropathy, arteriosclerosis, and cirrhosis are a triad of predisposing diseases that seem particularly to impede the victim's recovery from the complication.

It is especially in predisposed subjects that promptness of detection and appropriate management of the complication are essential. As a generalization, levarterenol appears preferable to metaraminol or allied agents as a vasopressor drug. Antibacterials were given empirically after samples of blood had been obtained for cultures. Usually tetracycline-strephomycin therapy was employed. Adrenal steroids, saline solution, blood, and blood substitutes were not used in the definitive management of bacteremic shock.

In about three fourths of fatal cases, bacteremic shock appears to have been but a terminal event in a potentially lethal associated disease. Mortality rate is higher also in patients having predisposing diseases or therapy, a urinary portal of entry, advanced years, and certain complications—especially renal shutdown; it may be comparatively higher in women. In a series of 59 patients recently reported by members of our group, the mortality was 37 per cent.

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ANSWER TO WHAT'S YOUR DIAGNOSIS

(From page 1005)

An abdominal paracentesis revealed blood. Laparotomy disclosed a large amount of blood and a rupture of the splenic capsule, which from history in retrospect probably ruptured during the severe coughing episode. A splenectomy was performed and the patient's recovery was uneventful.

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Dr. Terry noted that persons who have been vaccinated before will need only one additional dose. But those who have not been vaccinated before should receive two doses two months apart, and the two should be completed before mid-December, the approximate start of the influenza season.

The Difficult is that which can be done immediately; the Impossible that which takes a little longer.—George Santayana

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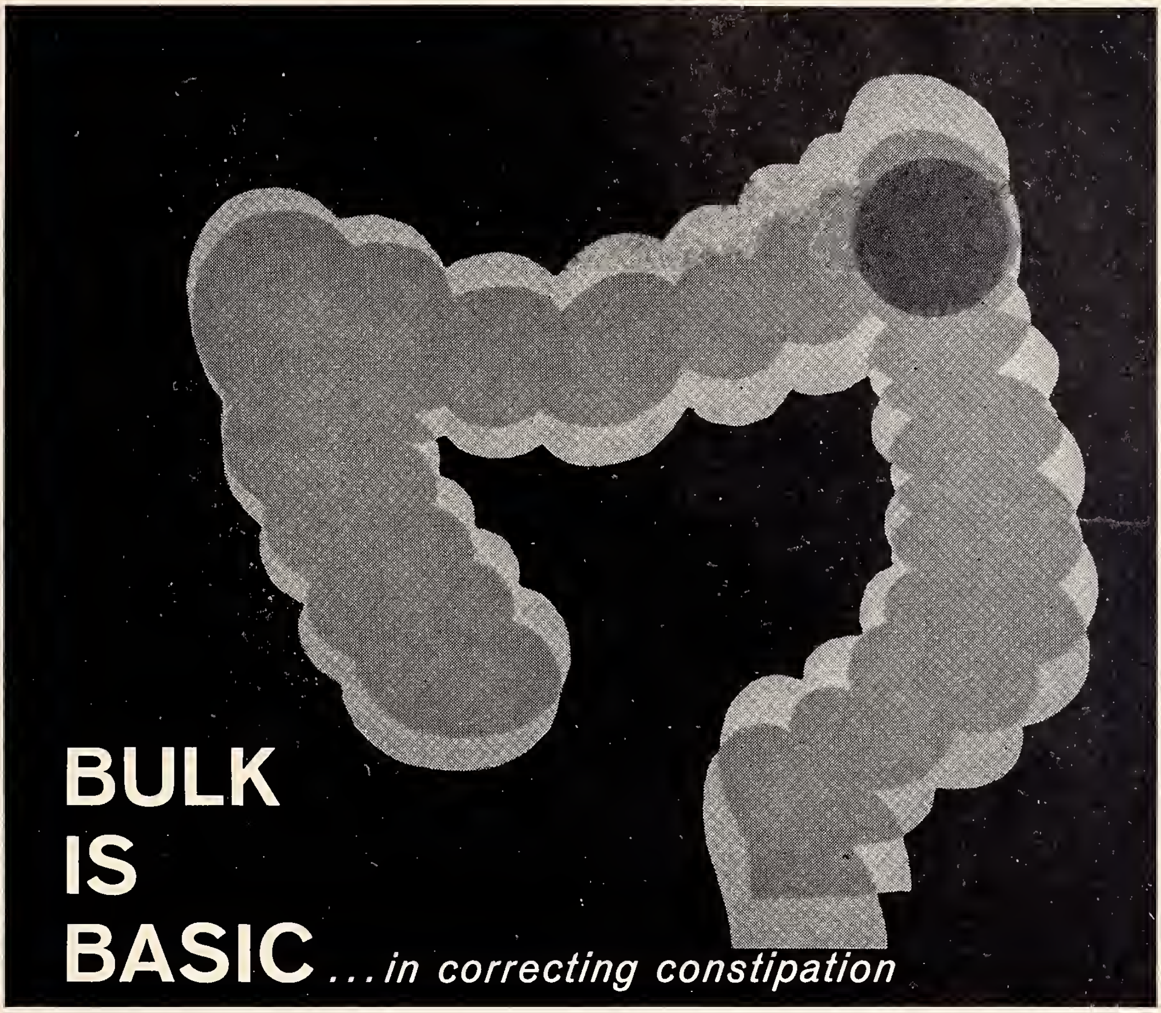
To wait may encroach upon eternity—



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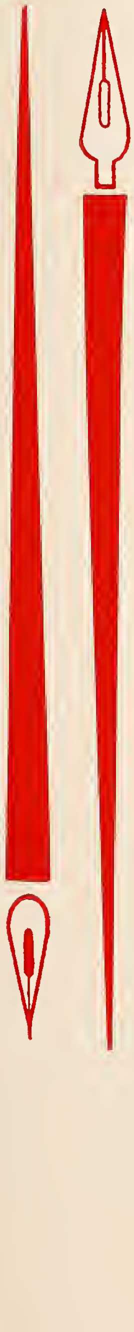
Editorials



Tranquility and Tranquilizers

Until the advent of the current-popular tranquilizing drugs the word tranquility carried a serene and comfortable meaning, a different meaning than it conveys today. Formerly tranquility was a calm state of mind, of well-being; the mind was at peace with itself and with the world; there were no personally-harbored animosities, no jealousies, no hates, no fears to corrode or pierce the soul. There were no worries or controversies to be recalled each morning and reviewed during the day. This true state of tranquility was attained in the old days by the power of the mind; mind-over-matter philosophy was practiced.

With the advent of the tranquilizing drugs the word 'tranquility' seems to have assumed a different meaning; it now suggests that one in search of tranquility must be a neurotic, a psychopath, a schizoid, or just an individual with an unstable constitutional makeup.

On closer observation just who is this individual who either cannot or will not maintain natural tranquilty but must resort to an artificial brand? Perhaps he is the recent recipient of a two-bit, rear-end car collision, who has lost his sense of proportion, imagines or magnifies slight injuries, and is contriving to sue. Maybe he's just a person who's upset because the neighbor's dog invaded his premises, or the grocer inadvertently short-changed him, or the butcher's meat was tough. Perhaps he is merely a person who has listened to unpleasant gossip, or who suspects his boss of favoritism, or who thinks his friends are deserting him. The category is comprehensive!

His doctor tells him he needs peace of mind and a change of environment. He needs 'tranquility'.—So a tranquilizer is prescribed.

* * * * *

Would it not be better if some of that good old-fashioned mind-over-matter could be revived and practiced in these modern days? Is not genuine tranquility far preferable and superior to the synthetic variety?

Carl O. Rice, M.D.

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SHOCK CAUSED BY INFECTIONS

In a review of 303 cases of bacteremia caused by gram-negative entero bacilli, Martin reports in this issue of MINNESOTA MEDICINE 59 cases with shock. Shock may be caused by various infections, but in the U. S. A. the usual sources are urinary and biliary infections, peritonitis, severe pneumonia and staphylococcal septicemia. The shock may be provoked by adverse effects of treatment upon an infection. Examples that come to mind include urethral catheterization, inlying intravenous needles and plastic tubing, drugs causing bone marrow damage and antibiotic-induced staphylococcal enterocolitis.

Little is known of the pathogenesis of shock in human infections. The patients are often too ill for detailed circulatory studies and animal experiments must, in this instance, be interpreted cautiously. So-called "endotoxin" shock is poorly understood. The cardiac output is reduced. Peripheral resistance may be either increased or decreased. Presumably small blood vessels are injured, and the return of blood to the heart is impaired. Most observers have found little or no reduction in circulating blood volume.

The circulatory impairment that follows some serious infections sets in quickly and its consequences are often anuria, delirium, coma and death. Bacterial endotoxin is complicated in composition and the mechanism by which it damages blood vessels is unknown. Experiments in dogs by Spink and Vick suggested that there are labile factors in blood which participate. The resemblance to anaphylactic shock is striking.

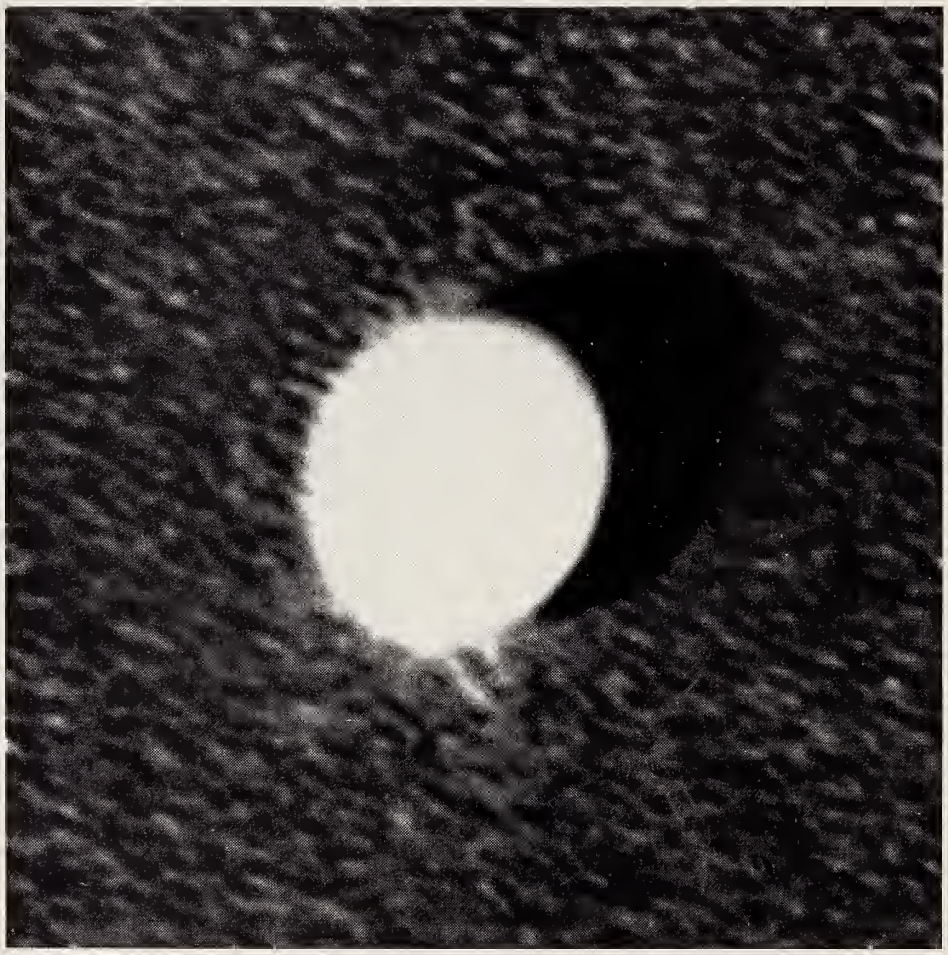
The report by Martin emphasizes some of the controversial, empirical aspects of treatment of infections with (or without) shock. Martin uses a combination of tetracycline and streptomycin. His results are as good, one-half to two-thirds recovering, as obtained by other investigators. He advises that chemotherapy be changed according to tests of *in vitro* drug resistance of bacteria obtained from blood cultures only if the empirical regimen fails. Does this mean that the tests for resistance may be misleading? They certainly may be if not properly done. Any laboratory test needs validation and this includes tests of drug resistance. Clinical results of chemotherapy in infections also need this type of control. The antibiotic treatment cannot be thoroughly evaluated without it.

The choice of antibiotics will be dictated by the type of infection and the experience of the physician. Nephrotoxic antibiotics, such as streptomycin, neomycin, kanamycin and polymycin, should be used cautiously if at all in patients with shock and only if they have good renal function. Chloramphenicol is less likely than tetracycline to produce diarrhea and staphylococcal enteritis, and it is as effective in killing most coliform bacteria (except Pseudomonas).

Recent experience indicates that in patients with severe staphylococcal sepsis the physician should assume at the outset that the staphylococcus is resistant to benzyl penicillin (G), as well as to the tetracyclines and chloramphenicol. Better results will be obtained through the immediate use of one of the penicillinase-resistant penicillins (methicillin, oxacillin) together with one of the following—bacitracin, erythromycin, vancomycin or novobiocin.

The place of steroid hormones in the therapy of bacteremic shock is unsettled. Our recent experience suggests that large doses (300 mg. daily) of hydrocortisone given intravenously for a few days will potentiate the effect of vasoconstrictor drugs. Hydrocortisone also reduces fever without some of the dangers that attend the use of hypothermia blankets. We have seen gangrene of the feet develop in a febrile patient kept on a hypothermia blanket for a week without protection. Laboratory experiments in animals indicate that the combination of aldosterone with angiotensin II might be more effective in bacteremic shock than norepinephrine and hydrocortisone, but the treatment has not been adequately tested in man.

Wendell H. Hall, M.D.
Minneapolis, Minn.



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Special Article

ALCOHOLISM

A basic cellular pathophysiologic state may be the etiology for some patients with severe alcoholism. The author has reviewed the problem in the light of recent experimental work from various laboratories and clinical studies. Clinicians will find some helpful hints in this article.

JOHN J. CUNNINGHAM*
Minneapolis, Minnesota

ALCOHOLISM is an ever-growing, serious threat to individual and social welfare. A comparison of figures published by national voluntary health agencies shows that alcoholism is five times as prevalent as cancer, and that there are six times as many alcoholics as there are patients with active tuberculosis.

In the summer of 1954 twenty-nine specialists in the field of alcoholism met in Toronto to attempt, among other things, a clarification of terminology. The definition which they agreed was perhaps the most useful reads:

> *A chronic disease or disorder of behavior characterized by the repeated drinking of alcoholic beverages to an extent that exceeds customary dietary use or ordinary compliance with the social drinking customs of the community and interferes with the drinker's health, personal relations, or economic functioning.*

Incidence

In attempting to determine how many alcoholics there are in the United States Dr. E. M. Jellinek, formerly of the Yale Clinic of Alcohol Studies, worked out a formula which takes into consideration several different factors: the number of deaths from cirrhosis of the liver, admissions to mental hospitals of alcoholic psychotics, arrests for drunkenness, admissions to general hospitals for diseases associated with chronic alcoholism, reports of deaths from alcoholism, etc. Carefully weighed on the basis of experience, carefully checked against the results of occasional but limited field surveys, this formula indicates that there are between four and five million alcoholics in this country.

The Nature of Alcoholism

Because alcoholism manifests itself as a disturbance of behavior, it has generally been considered to be the domain of psychologists and

Continued

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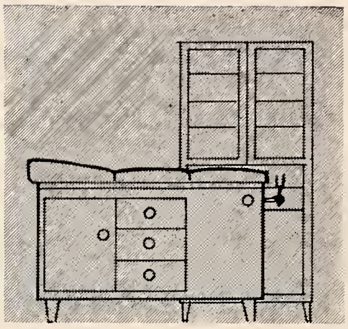

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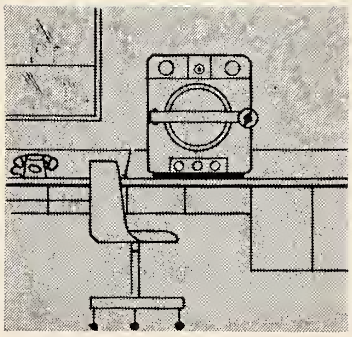

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psychiatrists, and the most effective treatment was assumed to be admission, voluntary or otherwise, to a mental institution. To those persons, who are not willing to even consider alcoholism as an illness, but rather as a moral weakness, the jails have seemed a good enough place to rehabilitate the problem drinker. The moral weakness theory of alcoholism has been upset to a great extent by Alcoholics Anonymous. There are among the members priests, ministers, doctors, bankers, and others whose characters when not drinking are necessarily above reproach. However, AA has fostered the idea that alcoholism is a neurosis. In the book *Alcoholics Anonymous,* which is the fundamental text of AA, it is stated that those who do not recover following the principles set forth by the program are people who cannot or will not give themselves to this simple philosophy, usually men and women who are constitutionally incapable of being honest with themselves.

Often disregarded is the fact that the addiction to and the intensity of craving for alcohol in some people are so great that they simply cannot overcome these weaknesses. The stigma of moral depravity or mental derangement, or both, has been strongly associated with alcoholism.

Mental Control

Over twenty years ago the late Dr. William D. Silkworth observed that alcoholics seemed to be compelled by a power beyond their control. He wrote:

> *Men have cried out to me in sincere and despairing appeal, "Doctor, I cannot go on like this. I have everything to live for. I must stop, but I cannot. You must help me."*

He further stated:

> *I do not hold with those who believe that alcoholism is entirely a problem of mental control. I have had many men who had, for example, worked for months on some problem or business deal which was to be settled on a certain date favorable to them.*
>
> *They took a drink a day or two prior to that date and then at once the phenomenon of craving became paramount to all other interests so that the important appointment was not met. These men were not drinking to escape. They were drinking to overcome a craving beyond their mental control.*

More recently Dr. James Smith, formerly director of research on alcoholism at New York University Bellevue Medical Center, stated:

> *Our laboratory and clinical studies of alcoholism during the past several years have convinced us that alcoholism is a metabolic disease. In our opinion the alcoholic brings to life's problems an unusual and deficient physical constitution.*

John W. Tintera and Harold W. Lovell, two New York physicians active in the study of alcoholism, have written that they believe the disease to be a psycho-biological disorder.

Professor Roger J. Williams, Director of the Clayton Foundation Biochemical Institute at the University of Texas says:

> *Environmental factors are potent and indispensable in bringing about alcoholism, but they do not do so unless the person involved possesses the type of metabolic individuality that predisposes toward addiction.*

Physical Characterisics

Dr. Smith also began to examine glandular function as a predisposing factor in alcoholism. Surveying physical characteristics of alcoholic patients, he noted in a group of 2,000 males that there was a specific hair pattern. Bald heads occurred only 1/8 to 1/10 as often as in normal men, but body hair was scanty and followed the female distribution. Adolescent acne was recalled by only four to five percent of the group, whereas it is usually found in twenty-five to forty percent of boys.

Physicologic Factors

Drs. Goldfarb and Berman have studied alcoholism in endocine insufficiency. They state: *the initial use of alchohol may be fortuitous. Its choice after the original introduction is predetermined. The organism first invites the noxious agent, alcohol, because of its helpfulness in stimulating needed secretary response of the adrenal cortex, and then requires the same agent with increasing constancy to achieve the desired result because of its tendency to produce other glandular dysfunction.*

Some other highly interesting work on the physiological causes of alcoholism has been done by Dr. Roger J. Williams at the University of Texas. In 1948 Dr. Williams began laboratory experiments with rats. He put two receptacles into

Continued

additional clinical evidence[1]
Sardo®
in the bath
"soothed the skin
diminished itch
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inflammation"
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skin disorders
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This new study corroborated others[2-4] showing that SARDO helps re-establish the normal physiologic lipid-aqueous skin balance.

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1. Borota, A., and Grinell, R. N.: J. Amer. Geriatrics Soc., 10:413, 1962.
2. Spoor, H. J.: N. Y. State J. M. 58:3292, 1958.
3. Lubowe, I. I.: Western Med. 1:45, 1960.
4. Weissberg, G.: Clin. Med. 7:1161, 1960.

their cages, one containing plain water and the other a ten percent alcohol solution. He found that the rats drank in much the same way as humans do; some were teetotalers while others drank the alcohol to varying degrees. However, when placed on marginal diets, all the rats began drinking heavily. Then, when given the proper vitamins after a period of time, they greatly reduced their intake of alcohol. Although these experiments were not one hundred percent successful with all rat colonies, the results were suggestive. Dr. Williams concluded that nutrition was in some way correlated with alcoholism.

Susceptibility to alcoholism is usually caused by a deranged cellular metabolism, the result of some unsatisfied nutritional need. It is this peculiarity, according to Williams, that so often makes an alcoholic.

Cellular malnutrition throws delicate appetite control mechanisms into disorder. Alcohol, because of its potential as a body fuel, functions deceptively in the place of food and acts as a poison, further deranging the appetite mechanisms. The result is a vanishing desire for food and an intense craving for alcohol as a substitute. Intensified starving of the cells follows. This circle can be broken by supplying the particular nutritional needs of the individual alcoholic. Incidentally, Dr. Williams concurs with the advice of Alcoholics Anonymous in that he believes alcoholics should abstain completely from alcohol in any form. He feels that although the alcoholic may return to moderate drinking, the risks of reversion to excess are too great.

Alcohol Addiction

One aspect in the problem of alcoholism that cannot be overlooked is addiction. That it exists there is no doubt, but the intensity of the addiction has been a matter of speculation. In all probability it varies greatly depending upon the amount of alcohol consumed regularly. Dr. Harris Isbell of the Addiction Research Center in the Public Health Service Hospital at Lexington, Kentucky, conducted an interesting experiment to determine if there was an addiction process in alcoholism and what its results were.

Ten men from 26 to 40 years old in excellent physical condition volunteered to drink alcohol in large doses over a long period of time. The men were former morphine addicts. Each had been psychiatrically diagnosed as having character disorders or inadequate personalities, in connection with which Dr. Isbell noted that their personality aberrations were no more severe than those sometimes observed in alcoholics. Since the experiment was conducted in a closed ward of the Public Health Service Hospital it was carefully controlled. On a regular basis the men were checked by physicians, psychiatrists, and laboratory technicians. They were fed a high-protein diet and given vitamins in addition. Throughout the day and night they drank 95% ethyl alcohol diluted with two parts water or fruit juice. For the first week or so their dosage was fairly small. It was increased for seven of the men to the point where they were drinking as much as one quart of 95 proof liquor diluted with a pint of water or fruit juice, or about as much as it is believed a man of average weight can metabolize in a day. Three of the ten quit after seven to sixteen days of drinking. They had hangovers. A fourth quit after thirty-four days. He had a severe hangover. The other six drank for from forty-eight to eighty-seven days. None had convulsions or delirium so long as he continued to drink. When alcohol was withdrawn, all six had marked tremors, extreme weakness, profuse perspiration, nausea, vomiting, diarrhea, elevated blood pressure, slight to marked fever, insomnia, and loss of appetite. Four had visual and auditory hallucinations, and two went into delirium, one so severely that he had to be given mass doses of barbiturates, which were gradually withdrawn. One of the men had seven convulsions in the first thirty hours after withdrawal and was in such serious condition that he required medication with barbiturates for eighteen days. In this latter most severe case withdrawal symptoms continued for almost three months.

Withdrawal Signs and Symptoms

Delirium and convulsions are dangerous symptoms. Delirium tremens is said to result in a mortality of from five to fifteen percent. More simply stated, withdrawal of alcohol from a chronic alcoholic can result in death. In sharp contrast, however, the withdrawal symptoms of morphine are markedly uncomfortable, but they do not include convulsions or delirium, and in uncomplicated cases there is no danger of death. Dr. Isbell's experiment strongly suggests that the withdrawal symptoms of acute chronic alcoholism are more serious than those of morphinism.

Continued

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. . . in minutes

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Nephenalin®

(the dual-action anti-asthmatic tablet)

. . . works with nebulizer speed—provides four-hour protection

One Nephenalin tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.
Dosage: Hold one Nephenalin tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.
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Caution: Do not administer Nephenalin with epinephrine. The two medications may be alternated at 4-hour intervals. Nephenalin should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. Thos. Leeming & Co., Inc., New York 17, N.Y.

Treatment of Alcoholism

While Dr. James J. Smith was studying thousands of alcoholics brought for emergency treatment to Bellevue Hospital he spied a chemical hope against delirium tremens. He found the blood of delirium tremens victims dangerously thick and their blood sugar precariously low. They breathed extremely fast, had feeble, rapid pulse rates and a fever that might go as high as 110°.

Benefit from Adrenal Cortical Extract

As these signs somewhat resembled the often fatal crises of Addison's Disease, and since victims of Addison's Disease profit from injections of hormones from the cortex of the adrenal glands of slaughtered cattle, Dr. Smith injected adrenal cortical extract into delirium-tremens victims in their terminal stages. Within hours they lost the nightmare visions that accompany this disorder.

Dr. Smith also injected adrenal cortical extract into victims of alcoholic insanity who suffered from neuritis and who incessantly invented tall stories. Within twenty-four hours their pain and confabulations were gone. Injections of adrenal cortical extract also soothed hangover jitters which drive alcoholics to further drinking for relief, and calmed the fearful tension that comes on before the new binges of periodic alcoholics.

Drs. John W. Tintera and Harold W. Lovell in an independent investigation reported that adrenal cortical extract practically eliminates the agonizing drying-out period that baffles alcoholics who are fighting to keep from drinking again. Victims who had been alcoholics for ten and even twenty years had their craving almost eliminated by the use of adrenal cortical extract.

Glutamine

Another marked advance in the conquest of alcoholism has been the discovery of the importance of glutamine, which is an easily decomposed amino acid found in protein, which has hitherto been thought nonessential for animal nutrition. Its value was discovered in research done by Dr. William Shive, an associate and colleague of Professor Williams.

This pure substance in small amounts counteracted to a marked degree the poisonous effect of alcohol on bacteria. Administering glutamine to experimental rats diminishes materially their physiological urge to drink alcohol. It has been studied carefully, and the significant effect of glutamine cannot be questioned. In some alcoholics remarkable responses have been obtained from using glutamine alone as a nutritional supplement. In a case reported by Dr. J. B. Trunell of Houston, Texas, one confirmed alcoholic stopped drinking when glutamine was administered daily without his knowledge. In fact he did not know that anything was being administered. Rehabilitation and employment resulted, and the last reports were that the patient was free from alcoholic craving.

Summary

Considering the aforementioned experiments, it may be necessary to evaluate the problem of alcoholism in an entirely new light. While there can be no doubt that in some few cases alcoholism is a manifestation of a neurogical disorder, generally speaking it must be considered to be basically a physiological illness. The approach then, obviously, must be to determine the cause of the craving which initiates this illness and to begin a prolonged and concentrated attack to eradicate it.

**I wish to thank Drs. Ruth Fox and Paul de Kruif for making available to me certain information contained in this article.*

Chest Physicians Issue Statement
On Cigarette Smoking

The Committee on Cancer of the American College of Chest Physicians stated that the weight of scientific evidence distinctly indicates that cigarette smoking and the inhalation of other atmospheric pollutants have an association relationship which strongly suggests a causal connection with chronic bronchitis, pulmonary emphysema, cor pulmonale, cardiovascular diseases and cancer of the lung.

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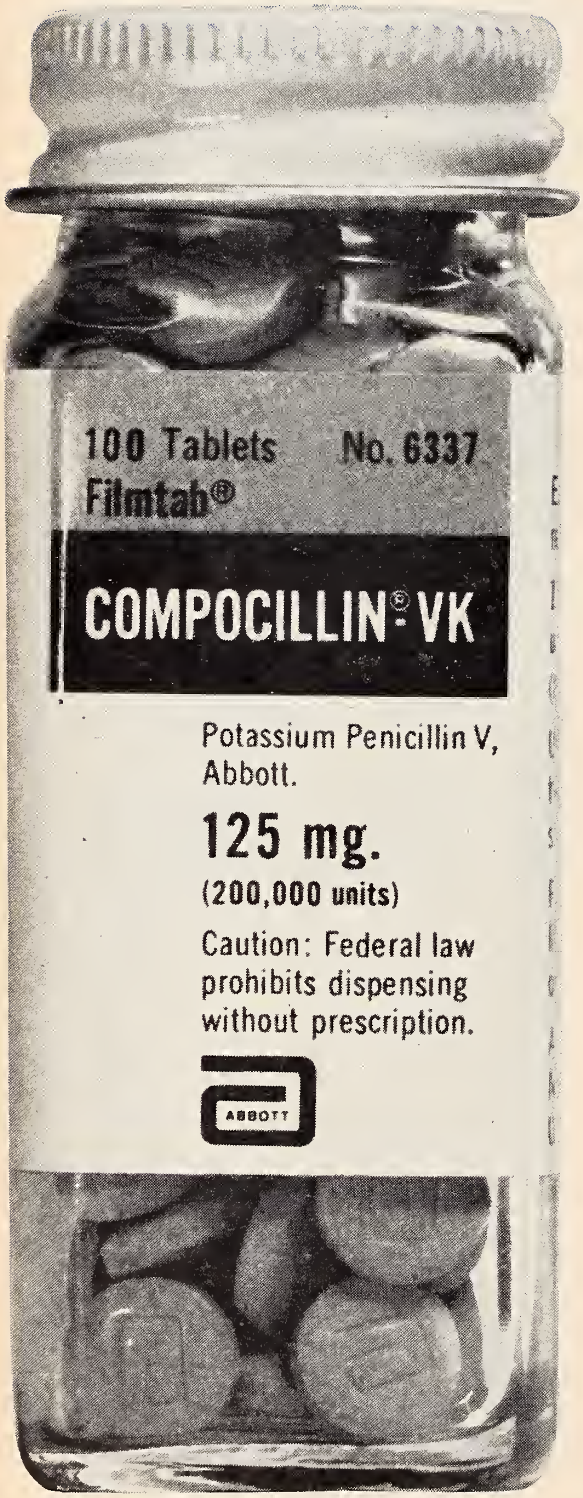
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Potassium Penicillin V, Abbott.
125 mg.
(200,000 units)
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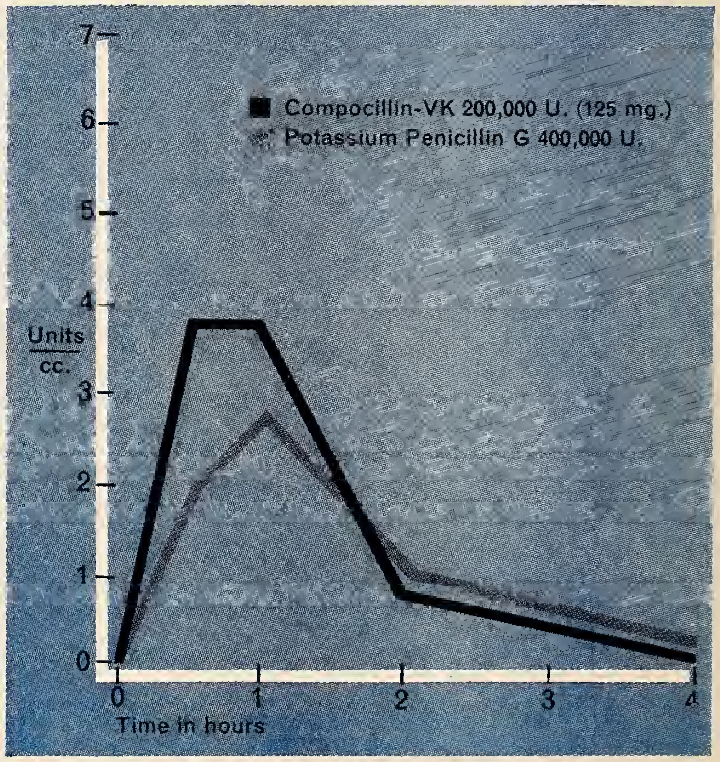
Single Oral Doses to Fasting Subjects*



Consider milder bacterial infections

An example might be a respiratory infection. Here economy could be a definite factor in your thinking. In the chart above, you'll see that 200,000 units (125 mg.) of Compocillin VK produces blood levels at least equal to those obtained with 400,000 units of oral penicillin G potassium. This means that in less severe infections, Compocillin-VK may be given at *half* the dosage needed with oral penicillin G—with no sacrifice in blood levels. In these cases, the cost of Compocillin-VK therapy will be no more—and often will be less—than treatment with oral penicillin G.

Compocillin-VK—the original potassium penicillin V • In Filmtab (125 and 250 mg.) and cherry-flavored Granules for Oral Suspension

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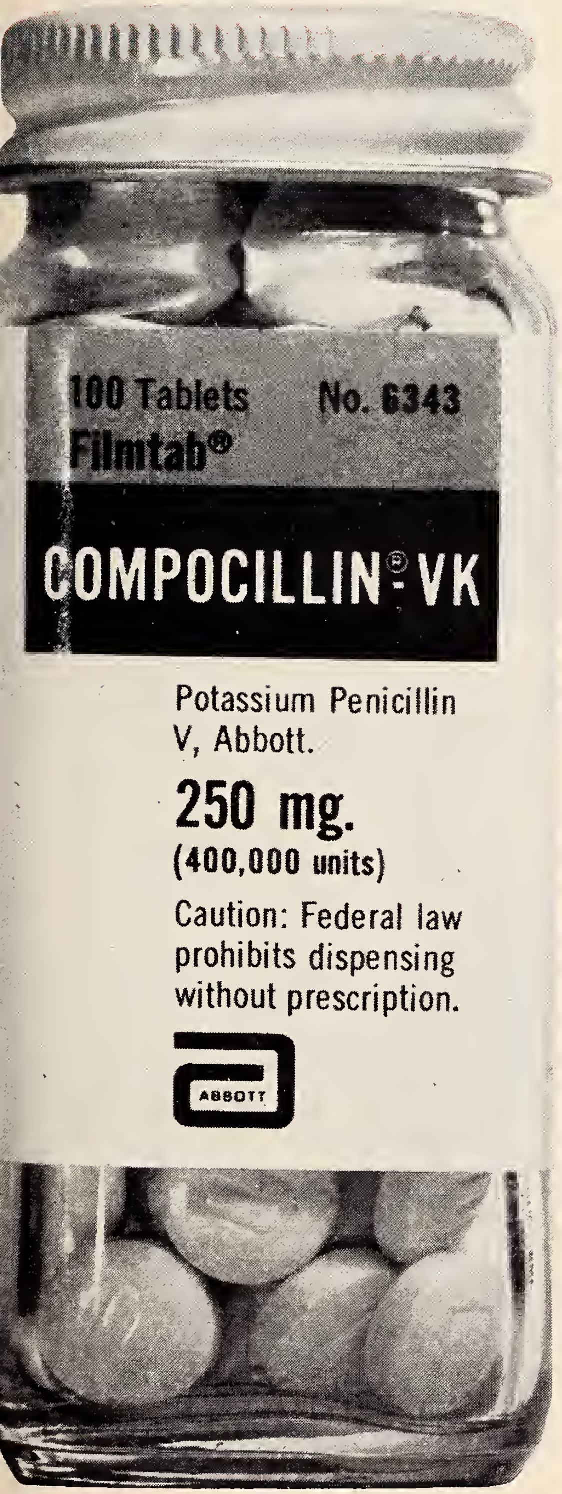
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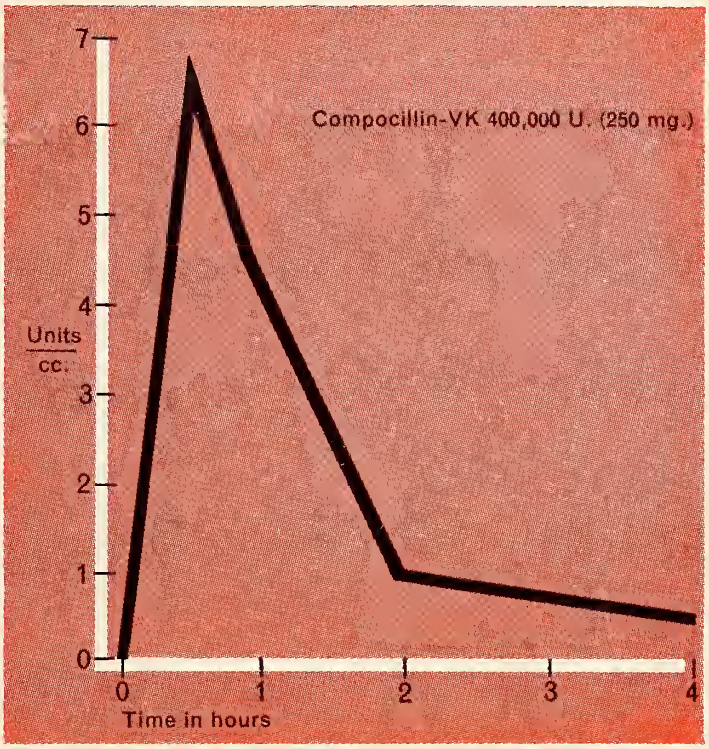

Then, for severe infections...

. . . where your primary concern is high peak serum concentrations, you can prescribe Compocillin-VK at *full therapeutic dosage* and get the maximum antibacterial activity possible with an oral penicillin. The chart above shows the rapid peak blood levels obtained with 400,000 units (250 mg.) of Compocillin-VK. Actually, these peaks occur faster—and are higher—than those obtained with intramuscular penicillin G. Indeed, Compocillin-VK has been used in cases previously reserved for parenteral treatment. The safety advantage (oral vs. injectable) goes without saying.

*Chart data from two separate studies completed by the Microbiologic and Medical Departments of Abbott Laboratories.

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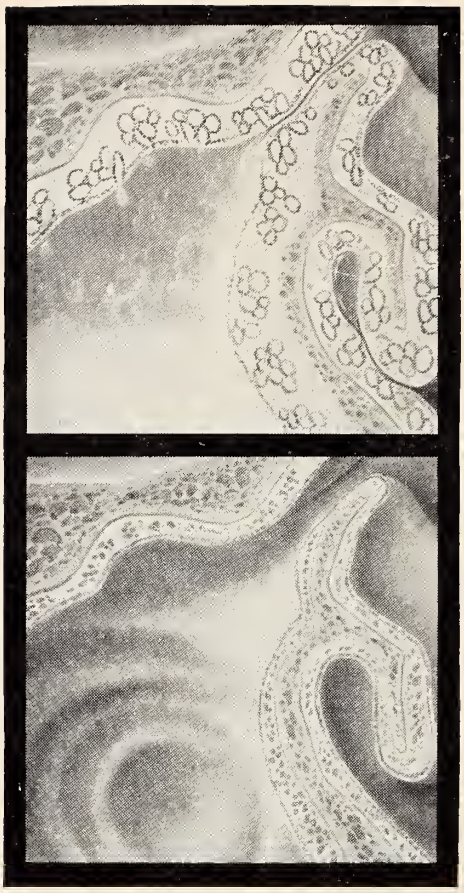
In colds and sinusitis

unsurpassed in providing drainage space without chemical harm



The clogged sinus
In sinusitis, the mucous membrane becomes hyperemic and edematous, lymph glands and goblet cells hyperactive. Ostium is closed by edema and secretions cannot drain freely.

The normal sinus
Magnified anatomy of a portion of maxillary sinus showing mucous membrane with cilia and lymph glands. Ostium is normal and patent.

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When there is nasal turgescence, tiny orifices of sinus ostia tend to clog. Neo-Synephrine nasal solutions and sprays reduce edematous tissues on contact to provide prompt relief. As turbinates shrink, obstructed sinus ostia open, drainage and breathing become freer and the boggy feeling of a cold disappears.

Delicate respiratory tissue and its natural defenses are not harmed by exceptionally bland Neo-Synephrine; systemic effects are nil; it does not sting. For years it has been recommended for prevention and treatment of sinusitis.[1-3] Repeated applications do not lessen effectiveness.

Available in plastic nasal sprays for adults (½%) and children (¼%), in dropper bottles of ⅛, ¼ or 1 per cent.

1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

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Physician's Guide to Wills, Trusts, and Estates

Almost every physician intends to make a will before he dies. Yet, it is a common occurrence for physicians to die without a will. Perhaps this neglect is due to inertia or an aversion to deal with matters which contemplates one's own demise. Ironically, this procrastination is shared with members of the legal profession. Lawyers who have spent a lifetime drawing wills for their clients often die without having drawn their own will.

This guide can help you to minimize the taxes that may be due at your death and to understand the important aspects of a will so that you can plan more wisely for your family's future security.

BERNARD D. HIRSH,
Chicago

PART I

UNLESS YOU make a will, your estate will be distributed arbitrarily as the laws of your state may dictate. This may conflict with your own desires. Someone for whom you wish to provide may receive little or nothing, and others, to whom you wish to leave nothing, may inherit a part of your property. Subject only to the legal rights of your surviving spouse, you can provide by will what you want done with your property. You may leave it outright or in trust. You can select the executor of your choice. Without a will, the court may appoint an administrator whom you would not have selected.

The person who delays in making a will generally departs this life without attending to this important part of life's business. The law does not require you to employ an attorney to draw your will but numerous court cases involving the litigation of home-made wills are stark evidence of the fact that professional assistance is necessary.

Laws of Descent

The laws of descent which determine the division of the property of a person who dies without a will differ in the various states. These statutes frequently provide that where the deceased leaves—

A wife (or husband) and children

The surviving wife or husband gets one-third of the estate and the children get the remaining two-thirds.

A wife (or husband) but no children

The surviving wife or husband gets one-third to one-half of the estate and the balance of the

Continued

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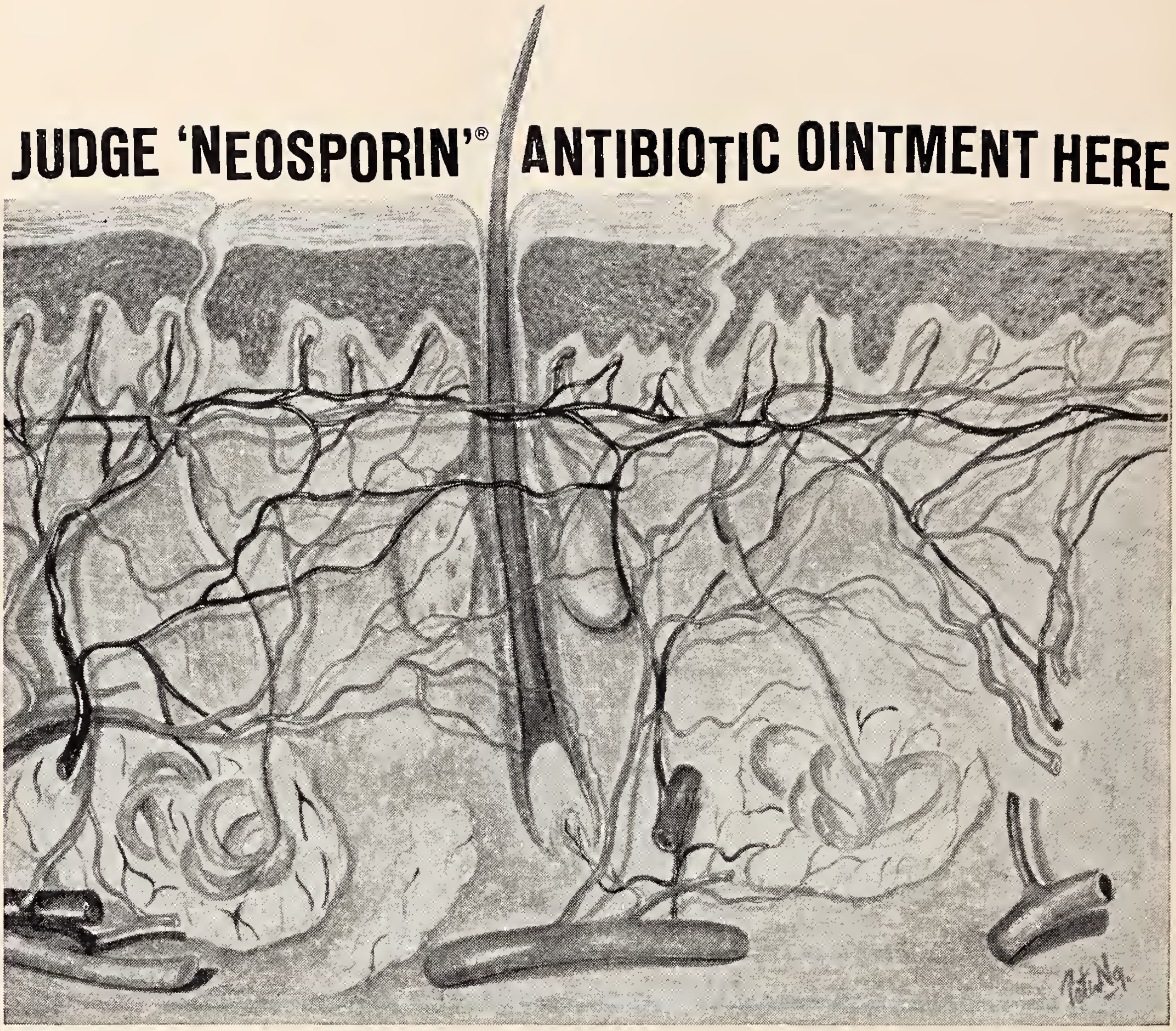

Results on SKIN are the true test of a topical anti-infection agent. Because no *in vitro* test can duplicate a clinical·situation in living skin, clinical use alone proves topical effectiveness. In thousands of cases of bacterial skin infection, consistently good results prove that 'Neosporin' Ointment works where topical efficacy counts—on the patient's skin. Why? The antibiotics diffuse readily from the special petrolatum base since they are insoluble in the petrolatum but readily soluble in tissue fluids.

'Neosporin' Ointment is bland, and rarely sensitizes.

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Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

estate goes to the parents of the intestate or their descendants. The laws of descent in California, Connecticut, New York, Michigan, Pennsylvania, and other states provide for a division of the estate between the spouse and the parents of the deceased. However, in states such as Colorado, Florida, Kansas, New Jersey, and Minnesota, the entire estate goes to the surviving spouse. In Illinois and Indiana, the estate is divided among the surviving spouse and the parents, brothers and sisters of the deceased.

Only children

They take the property in equal shares. (If any child is deceased, the heirs of the deceased child take his share of the estate.)

No heirs

The estate reverts to the state.

Community Property

In jurisdictions which have the *community property* system, the earnings of both husband and wife during the marriage are considered to be community property and to belong to them as a family unit. If the husband or wife dies, the survivor takes one-half of the community property and the other half may be disposed of by the will of the deceased. But if there is no will, the entire property belongs to the survivor. Property acquired by either husband or wife before marriage or by gift or inheritance during the marriage, is separately owned and is not community property.

Probate Costs

When a person dies without a will, the probate court will appoint an administrator. If the decedent was married, ordinarily the surviving spouse will be appointed. State laws require an administrator to post a bond equal in amount to the estate even under circumstances where a widow serving in this capacity may also be the recipient of the bulk of the estate. This unnecessary cost can be eliminated where the terms of a will expressly waive the statutory requirement for a bond.

Another element of cost to be reckoned with when there is no will, particularly as it may affect smaller estates, involves minor children who share in the estate. State laws require the appointment of a guardian to handle the estates inherited by the children until they attain legal age. Generally, the probate court will appoint the surviving spouse as guardian, but a bond will have to be

Continued

GLOSSARY OF TERMS

Since a will is a legal document, your attorney is likely to use legal terms when he discusses the subject with you and when he drafts your will. To the extent that precise draftsmanship allows, attorneys of the modern school try to express legal concepts in simple language. However, many technical words used in connection with wills do not have synonyms in common usage. The following is a glossary of terms relating to wills.

Administrator: a person or institution authorized by the probate court to manage and distribute the property of a person who dies without a will; if a woman, the term is *administratix.*

Attestation: the act of witnessing a will at the request of its maker and signing it as a witness.

Bequeath: to give personal property by will to another.

Bequest: a gift by will of personal property; it is synonymous with *legacy.*

Codicil: a supplement to a will that modifies it in some respects; a codicil requires the same formalities of execution as a will.

Decedent: a deceased person.

Devise: the act of giving real property by will.

Devisee: one to whom real property is given by will.

Executor: a person or institution named in a will to manage and distribute the property of the maker of the will in accordance with its provisions; if a woman, the term is *executrix.*

Holographic will: a will that is entirely handwritten, dated, and signed by the maker himself; some states do not require such wills to be authenticated by the signatures of witnesses.

Intestate: a person who dies without making a valid will is said to die *intestate.*

Nuncupative will: an oral will. Some states recognize such wills when made by a person during his last illness, or by a mariner at sea, or by a soldier or sailor in battle, and usually only with respect to estates involving personal property of limited value. A further requirement is that it must be reduced to writing by one or more witnesses and probated within a specified time.

Personal property: any kind of property other than real estate.

Per stirpes: property left *per stirpes* is divided equally among the decedent's children. If one of the children is dead, his or her children have a right to an equal part of their parent's share.

Probate: the procedure for offering official proof of the validity of a will in court.

Probate court: a court that has jurisdiction over wills, the administration of estates, and related matters.

Real property: real estate.

Testament: the terms *will* and *testament* are synonmous.

Testate: a person who dies leaving a valid will is said to die *testate.*

Testator: one who has made a will; if a woman, the term is *testatrix.*

Will: the legal declaration of a person with respect to the disposition to be made of his property after his death.

Put your low-back patient back on the payroll

Soma relieves stiffness —stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

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YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A.M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. USUAL DOSAGE: 1 TABLET Q.I.D.

The muscle relaxant with an independent pain-relieving acti

SOMA

(carisoprodol, Walla

Wallace Laboratories, Cranbury, New Jers

FIGURE I
How to Estimate
YOUR TAXABLE ESTATE
Subject to the Federal Estate Tax

YOUR GROSS ESTATE

CASH AND MISCELLANEOUS ASSETS, including the value of real estate, stocks and bonds, debts due you, etc.
JOINTLY OWNED PROPERTY with right of survivorship, in proportion to your contribution to the purchase price.
LIFE INSURANCE you own or which is payable to your estate.
GIFTS MADE WITHIN 3 YEARS before your death unless it is proven that contemplation of death was not the motive.
POWERS of APPOINTMENT, i.e., your right to designate who is to get the principal or income from a trust, pension plan, etc.

— minus

YOUR DEDUCTIONS

DEBTS YOU OWE, funeral expenses, and costs of administering your estate (about 7% of the value of the property passing to your executor).

= equals

YOUR ADJUSTED GROSS ESTATE

— minus

MARITAL DEDUCTION		CHARITABLE DEDUCTION		SPECIFIC EXEMPTION
What you leave your wife, but not more than half your "adjusted gross estate."	and	What you leave to schools, churches, hospitals and other charities.	and	$60,000 of your estate is specifically exempt from tax.

= equals

YOUR TAXABLE ESTATE

posted nevertheless. The duties of a guardian must be performed in accordance with state laws and court orders and jurisdiction, which includes the filing of an annual accounting. In addition to the guardian's bond there will be court costs and legal fees. Despite any personal financial needs that may develop on the part of a widow because of illness or other reason, she is prohibited by law from diverting to herself any part of an estate held in guardianship. A will which leaves the entire estate to the surviving spouse disposes of any reason for the appointment of a guardian.

A family man with an estate likely to reach $120,000 or more must realize that the beneficiaries of his estate also include the federal tax collector. However, the tax-conscious attorney often can substantially minimize death taxes by means which may not be available in the absence of a will. This includes the creation of trusts in a will designed not only to reduce taxes but to conserve the estate following the death of the creator in a way that will assure his beneficiaries the greatest degree of long-range financial security.

Need For a Will

The need for a will is not limited to wealthy persons. Frequently, it is more important for a person of limited means to provide for the distribution of his estate by a will. Assume, for example, that Dr. and Mrs. Jones, who have no children, reside in a state in which the laws provide for a division of the estate of a deceased who dies without a will between his parents and the surviving spouse. Dr. Jones dies, leaving an estate of $25,000. His estate is divided between his parents, who may not need the money, and his wife, who may have no estate of her own and no source of income.

Another common type of situation is this one. Dr. Roe's wife has independent wealth. He dies without a will, and his entire estate goes to his wife and children. The parents of Dr. Roe, who are indigents and to whose support he was contributing contrary to the wishes of his wife, are legally entitled to no part of his estate. If Dr. Roe had seen fit to make a will before his death, he could have provided for his parents after giving his wife the share required under the laws of descent.

What Is a Will?

A will is a document or oral expression which directs how a person's property shall be distributed upon his death. To be valid, certain formalities must be observed as to its form, content, and execution. It is revocable at any time during the maker's lifetime.

A will may be typewritten, handwritten (a *holographic* will), or oral (a *nuncupative* will). Oral wills involving a small amount of personal

Continued

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property are valid in some states, but only under special circumstances, such as when made by a mariner at sea or a soldier or sailor in combat.

Your attorney may refer to your will as your "last will and testament." Historically, the term "testament" was used in early England for centuries to refer to a disposition of personal property, and the term "will" was applied only to a disposition of real estate. In comon usage, the words "will" and "testament" are now synonymous. The right to dispose of property by will at death existed in ancient Egypt, Babylon, and Assyria, and in the early civilizations of the Hebrews, Greeks, and Romans. The modern law of will has its foundation in the "Statute of Wills" which was enacted in England during the reign of Henry VIII. The law concerning wills is intended to give the owner of property reasonable control over the disposition of his property upon his death.

Who May Make a Will

Any person who is above the minimum age set by statute and who has sufficient mental capacity to understand the nature and extent of his property and the effect of the document he is signing, may make a valid will. A person making a will must be in such a state of mind when he makes his will that he fully understands what he is doing and his relation to those who are to receive his property after his death. Some impairment of the mental faculties of the maker does not necessarily make his will invalid. Testamentary capacity does not depend upon absolute soundness of mind and memory. Mental aberrations which may affect the normal exercise of his faculties but which do not result in such impairment of reason or memory as to render the testator incapable of understanding the disposition he is making by will do not destroy his testamentary capacity. The law does not consider "testamentary capacity" and "sanity" as equivalents.

The deterioration of mental powers that often accompanies extreme age is not in itself sufficient to invalidate the will. Such a person need only have sufficiently sound mind and memory to understand the will and the property involved. The same principle applies to an insane person or a person of low mentality as long as he can comprehend the "natural objects of his bounty" and the extent of his property.

The act of making a will must be voluntary and without force or compulsion. If it can be proven that the execution of the will was induced by fraud or undue influence exercised upon the testator, the probate court will declare it invalid.

Husband and Wife

The laws of many states make it practically impossible for husband and wife to disinherit each other. These laws provide that a surviving spouse may elect to "take against the will." This means that the survivor has the option of taking what would be his or her share of the estate if there was no will. Such laws generally assure a surviving spouse one-third to one-half of the testator's estate.

Under the laws of many states, a wife has an immediate one-third or one-half interest in her husband's real property upon his death. This interest is called *dower*. Similar provision is made under such statutes whereby a husband receives an interest in his wife's real property called *curtesy*.

Common Disaster

In this age of the airplane and automobile, the possibility that both husband and wife may perish as a consequence of a common disaster poses a problem that should be reckoned with in making a will. The order or time of death may determine whether the husband's or wife's family may inherit the husband's estate. For example, assume that Dr. Smith and his wife, a childless couple, are killed as a result of an automobile accident and neither have wills. Dr. Smith is killed outright and his wife lingers a few days before she dies. Under the laws of the particular state, Mrs. Smith inherits her husband's estate immediately. She is also named the exclusive beneficiary of his insurance. Upon her death, a few days later, her family then acquires Dr. Smith's original estate and his family is excluded from participation. To avoid such uncertainties about inheritance, a clause may be included in the wills of both the husband and wife to the effect that each is to inherit the property from the other, provided one spouse survives the other by a specified number of days. This may be a week or month or a similar short period of time. If the other party is not alive at the end of the specified period, then the property is to pass to another beneficiary.

Unless there are special circumstances that dictate otherwise, your wife should be consulted about the provisions of your will. Good estate

Continued

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planning requires both husband and wife to have wills that complement each other.

If You Have Children

It is customary to will a small estate entirely to the surviving spouse. If the children are adult, the wife will probably need it to provide the necessities of life during her widowhood. If the children are young, the probability is that the mother will need the funds to provide a reasonable standard of living. For example, under circumstances where the husband leaves one-third to his wife and the remaining two-thirds to a child, either by will or under the distribution provided by law where there is no will, the court will appoint a guardian for the estate of the child. Even though the mother may be appointed as guardian, she can use the child's estate only for his necessary expenses. When he attains legal age he will receive the remainder.

If both you and your wife are killed in a common disaster or die within a short time of each other, who will have custody of your minor children and the property you leave them? State laws usually permit you to name a guardian of the person of your minor children in the event of the death of both parents and a guardian of their property. The same person may be named by will as guardian of the person and the property of a minor child, as is customary, or 2 guardians may be named, one of the person, and one to manage the minor's property. Where a large estate is involved, a close relative is often named as guardian of the minor's person, and a trust company as guardian of his estate.

If for no other reason than to provide for the custody of minor children, a husband and wife should both have wills which reflect their joint judgment as to who is best qualified to rear their children in the event of their deaths.

It is not necessary for a testator to leave an express legacy to each of his children. Except for Louisiana, this is the prevailing rule despite any belief to the contrary. But if a child has been omitted from the will of his parent, there is a question of fact which may be submitted to a jury as to whether or not the omission was intentional or unintentional, or due to accident or mistake. Accordingly, all children of the testator should be mentioned in the will, either by name or as a group, and if disinheritance is desired, a bequest of a nominal sum, such as $1, will accomplish the purpose.

Points to Remember

In planning your will you should give consideration to:

(1) The amounts that certain persons may receive as beneficiaries of your life insurance.

(2) The financial needs of your wife, children and relatives, and any mental or physical impairments that any may have which would merit an unequal distribution of your estate.

(3) The financial needs of your children if your widow should remarry.

(4) Gifts that you may have given to any of your children or others which should be treated as an advance on their inheritance.

(5) Leaving specific items of personal property, such as jewelry, art objects, antique furniture, etc., to those beneficiaries who may have a particular appreciation for such items.

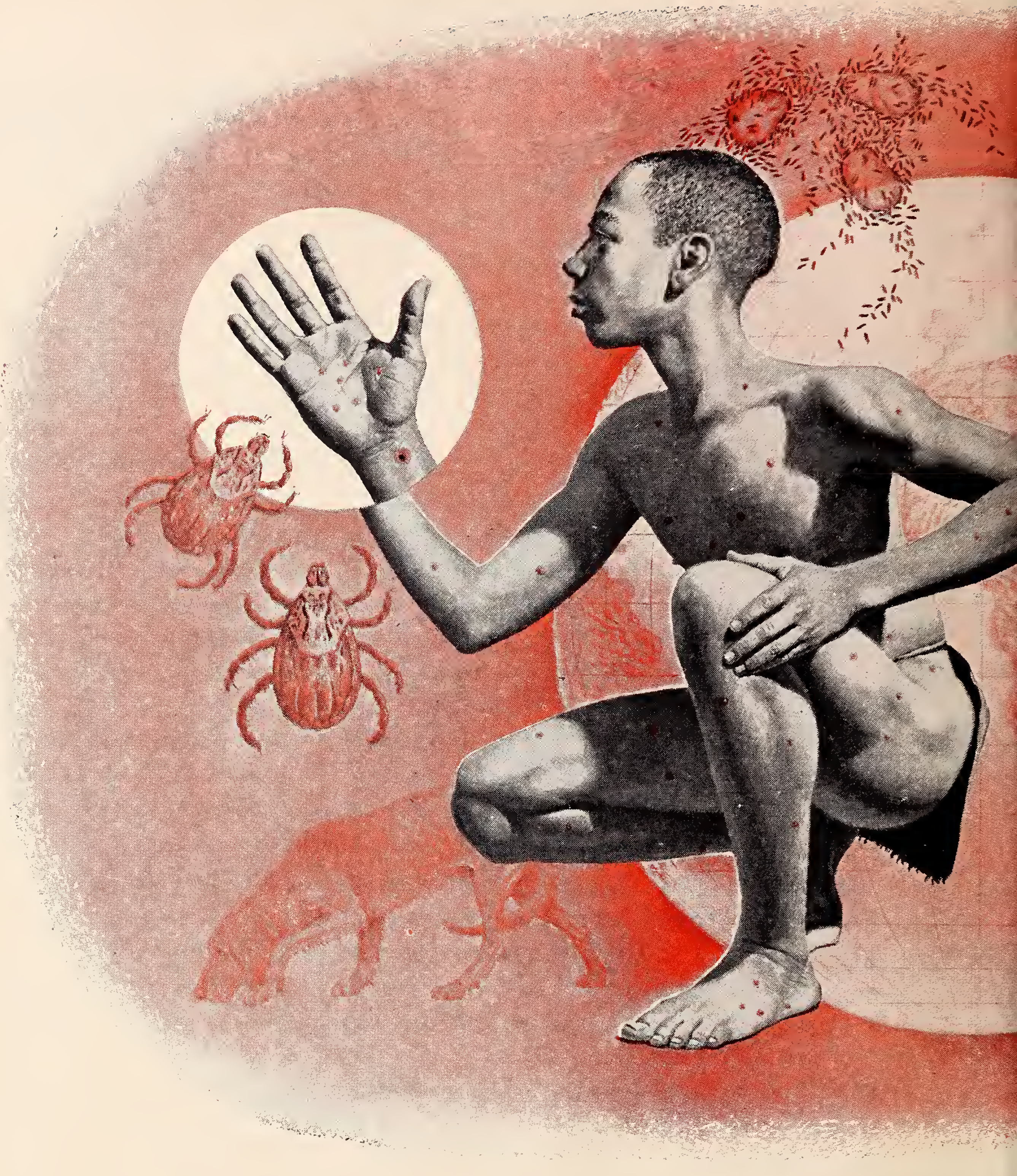
(6) Particular services or attention which any of your relatives or others may have rendered you during periods of illness or other need.

(7) The making of gifts during your lifetime to your heirs and loved ones as a means of avoiding inheritance and estate taxes.

(8) Providing for gifts to a particular church, medical school, hospital, or other charity.

(9) Providing for a distribution of your estate in a manner that will avoid dissension among your heirs and relatives and assure respect for your memory.

(TO BE CONTINUED NEXT MONTH.)



from boutonneuse fever in Africa

Whether treating boutonneuse fever, bronchopneumonia, or a host of other infections, physicians throughout the world continue to rely on the effectiveness, relative safety, and exceptional toleration of Terramycin in broad-spectrum antibiotic therapy. This continuing confidence is based upon thousands of published clinical reports and successful experience in millions of patients. *The next infection you see will more than likely be "Terra-responsive."*

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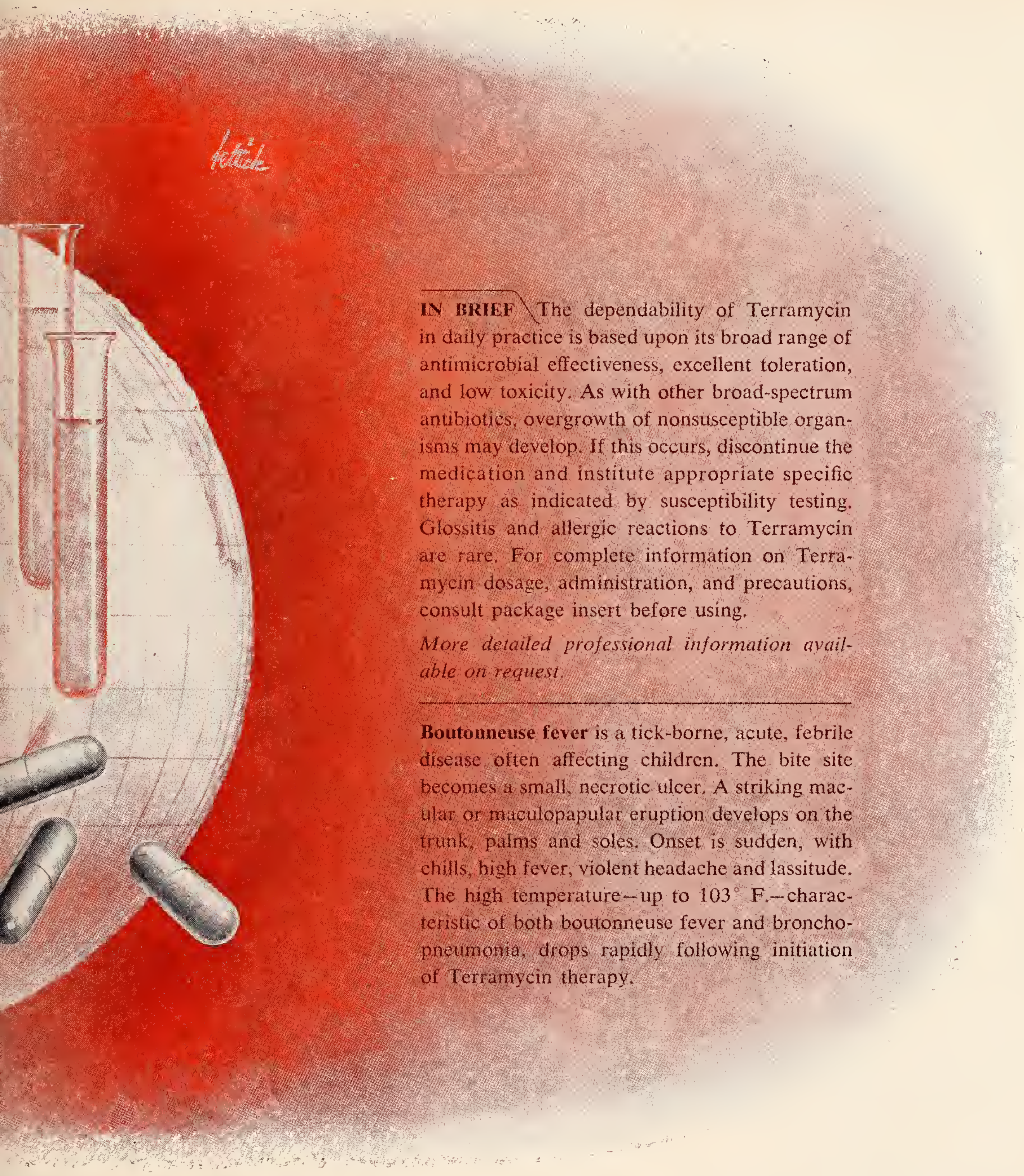

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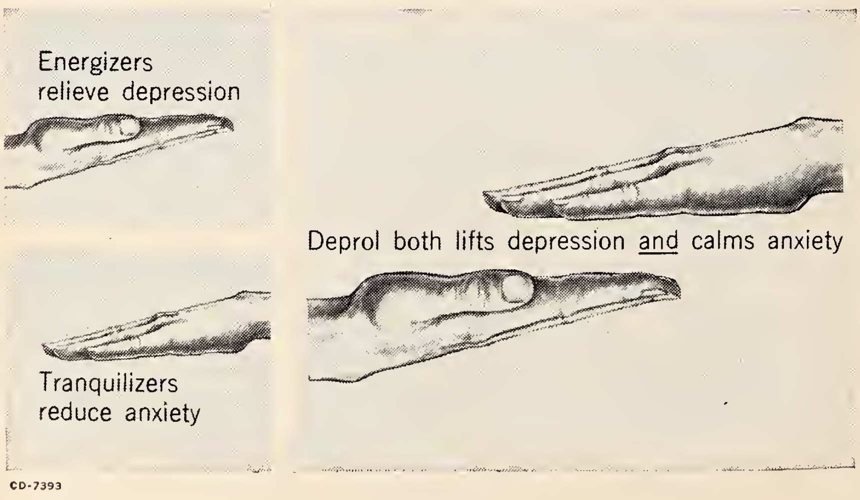
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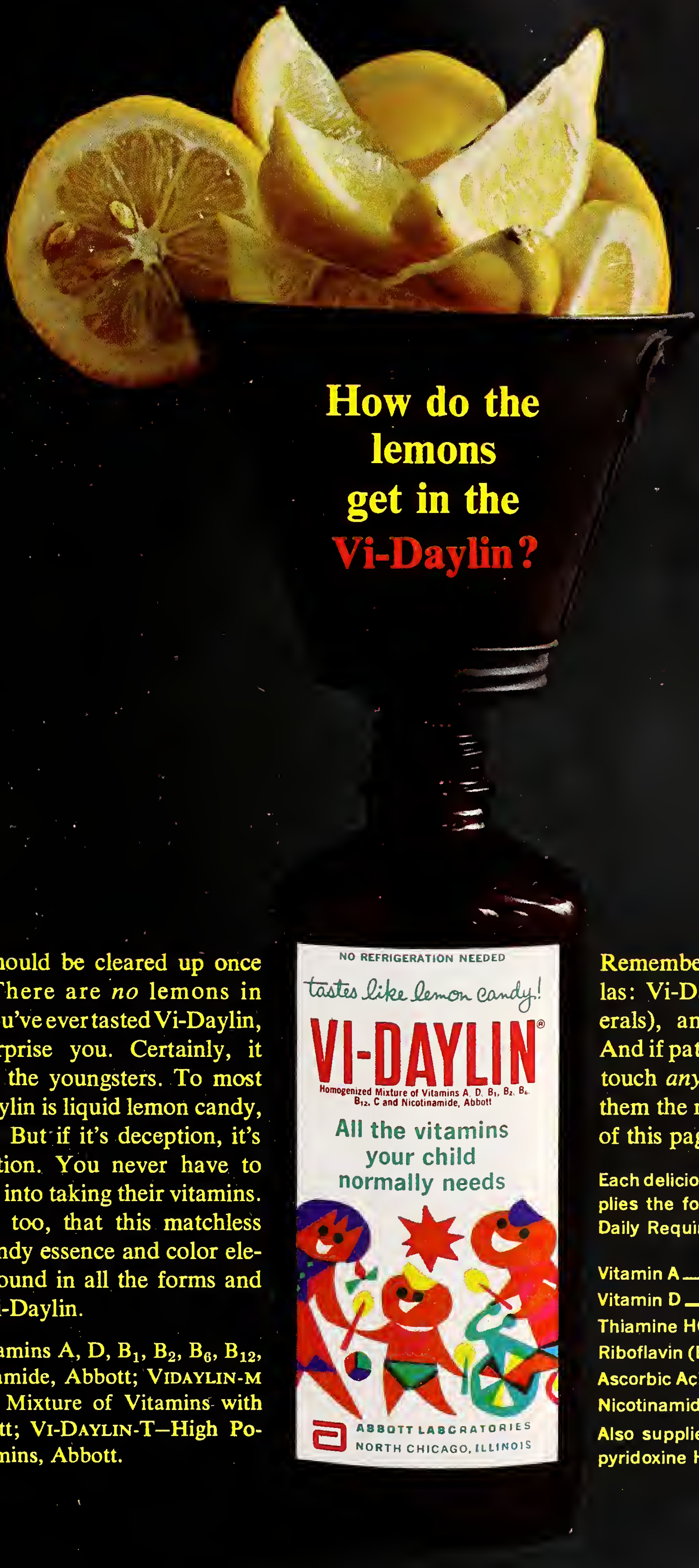
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Vitamin D	10 mcg. (400 units)	1	1
Thiamine HCl (B_1)	1.5 mg.	2	6
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Ascorbic Acid (C)	50 mg.	2½	5
Nicotinamide	10 mg.	1⅓	2

Also supplies cyanocobalamin (B_{12}) 3 mcg. and pyridoxine Hydrochloride 1 mg.

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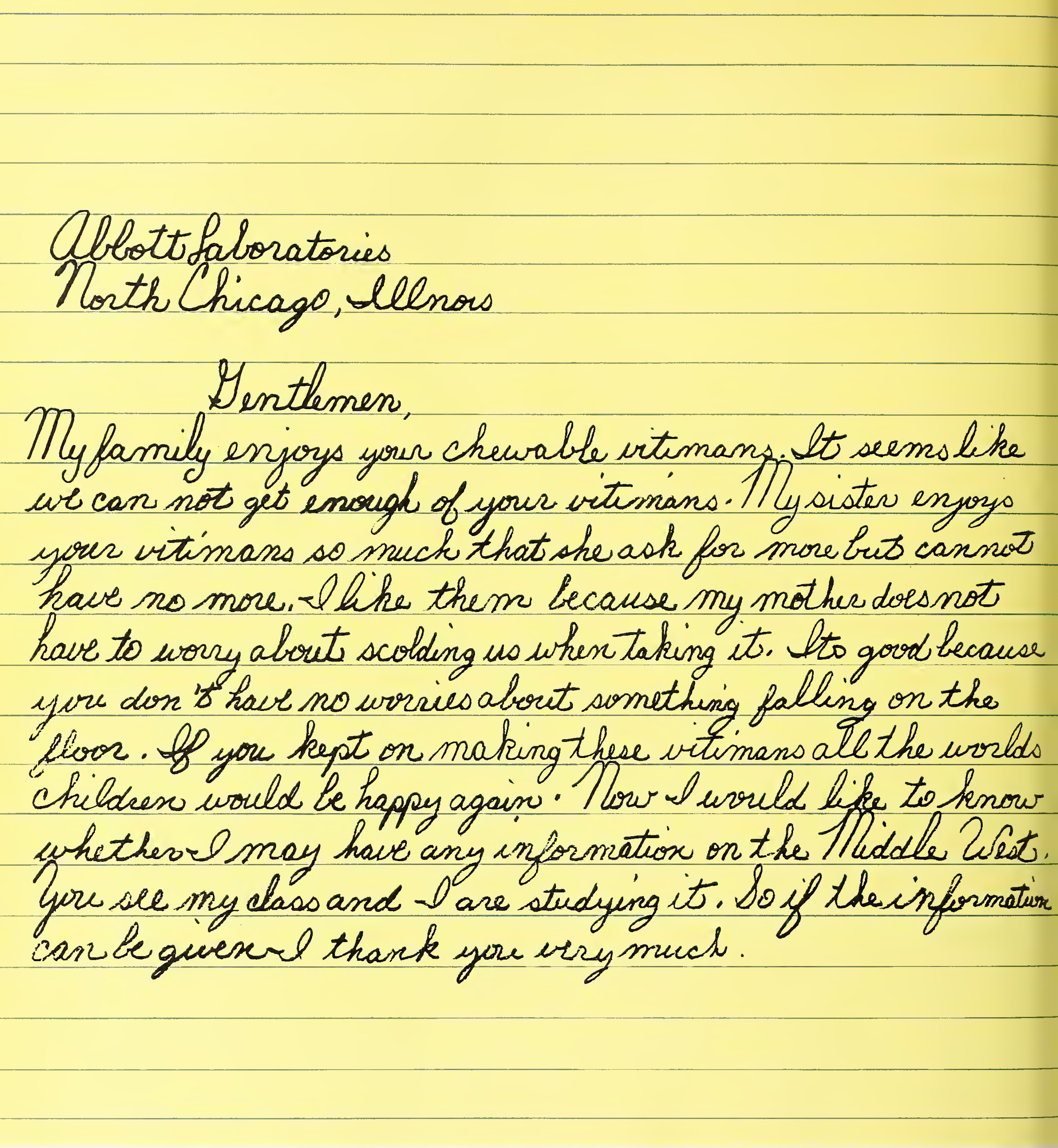

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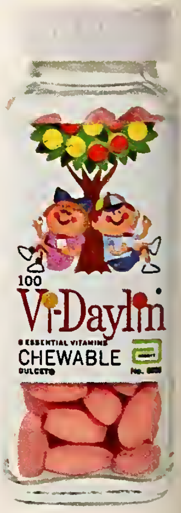


ABBOTT

Abstracts and Briefs

THROMBOCYTOPENIA

A survey of 500 consecutive cases of thrombocytopenia seen at Mayo Clinic in the period 1954-58 was made with the objective of determining the incidence of various etiological factors. The patients studied all had platelet levels under 100,000 per cubic millimeter.

Data were assembled from the histories regarding associated diseases and exposures to toxins, from physical findings, and from various hematological laboratory studies.

Seventy-three patients were thought to have idiopathic thrombocytopenia. Emphasis is placed on the relative youth of this group of patients, the absence of splenomegally, the occurrence of purpura, infrequency of anemia and leukopenia, and normal bone marrow morphology with normal or increased megakaryocytes. The authors review the question of a relationship of idiopathic thrombocytopenia and systemic lupus erythematosis. They believe their data do not support the concept of latent systemic lupus as the underlying disturbance in patients considered to have idiopathic thrombocytopenic purpura. They do recognize, however, that thrombocytopenic purpura may be one of the autoimmune manifestations of systemic lupus, and recommend the clot test for all patients with thrombocytopenia of obscure origin.

The remaining cases were further subdivided according to etiology. In 223 cases of leukemic disorders of the bone marrow 78% were due to acute leukemia.

Another group consisted of seventy patients with primary dysfunction of the marrow. Fifty-seven had aplastic or hypoplastic anemia, 7 had megaloblastic anemia, and 6 had myelofibrosis. Causative factors in this group included two instances of irradiation, three of TEM therapy, and 13 of recent exposure to chloramphenicol, DDT, hair dyes and benzol derivatives. An antecedent illness or toxic exposure was not elicited for 37 patients.

Primary hepatic or splenic disorders accounted for thrombocytopenia in 44 patients.

Of 36 patients with malignant lymphoma who had thrombocytopenia, twelve gave histories of therapy with bone marrow depressant agents.

Thrombocytopenia was the sequela of an infectious disease in 9 patients.

Patients with collagen diseases constituted another group. Eight instances of diminished platelets were found in patients with systemic lupus erythematosis.

Metastatic malignancy of the bone marrow (breast, prostate, lung) was considered responsible for thrombocytopenia in 8 patients.

Nine patients were categorized as having thrombocytopenia secondary to immunological disturbances. In this group were instances of acquired hemolytic anemia, drug hypersensitivity (quinidine, phenylbutazone) and tetanus booster reactions.

An indeterminate group of 19 cases were classified as toxic effects of coexisting diseases such as chronic renal disease, indeterminate pulmonary disease, thrombophlebitis, osteoporosis, carcinoma of the stomach, and carcinoma of the lung.

The authors are impressed with the observation from this series and the studies of others that idiopathic thrombocytopenia is being less frequently established as a diagnosis, while autoimmune secondary thrombocytopenia is becoming more common.

The article under review impressively documents the increasing complexity of the condition of purpura or thrombocytopenia. Rather than the distinct entity of a few years ago, it becomes more obviously only a manifestation or symptom, the etiology of which must be ascertained to permit appropriate therapy. The review of a large series, such as this one from Mayo's, will be most instructive to the practicioner with only limited and infrequent exposure to these phenomena.

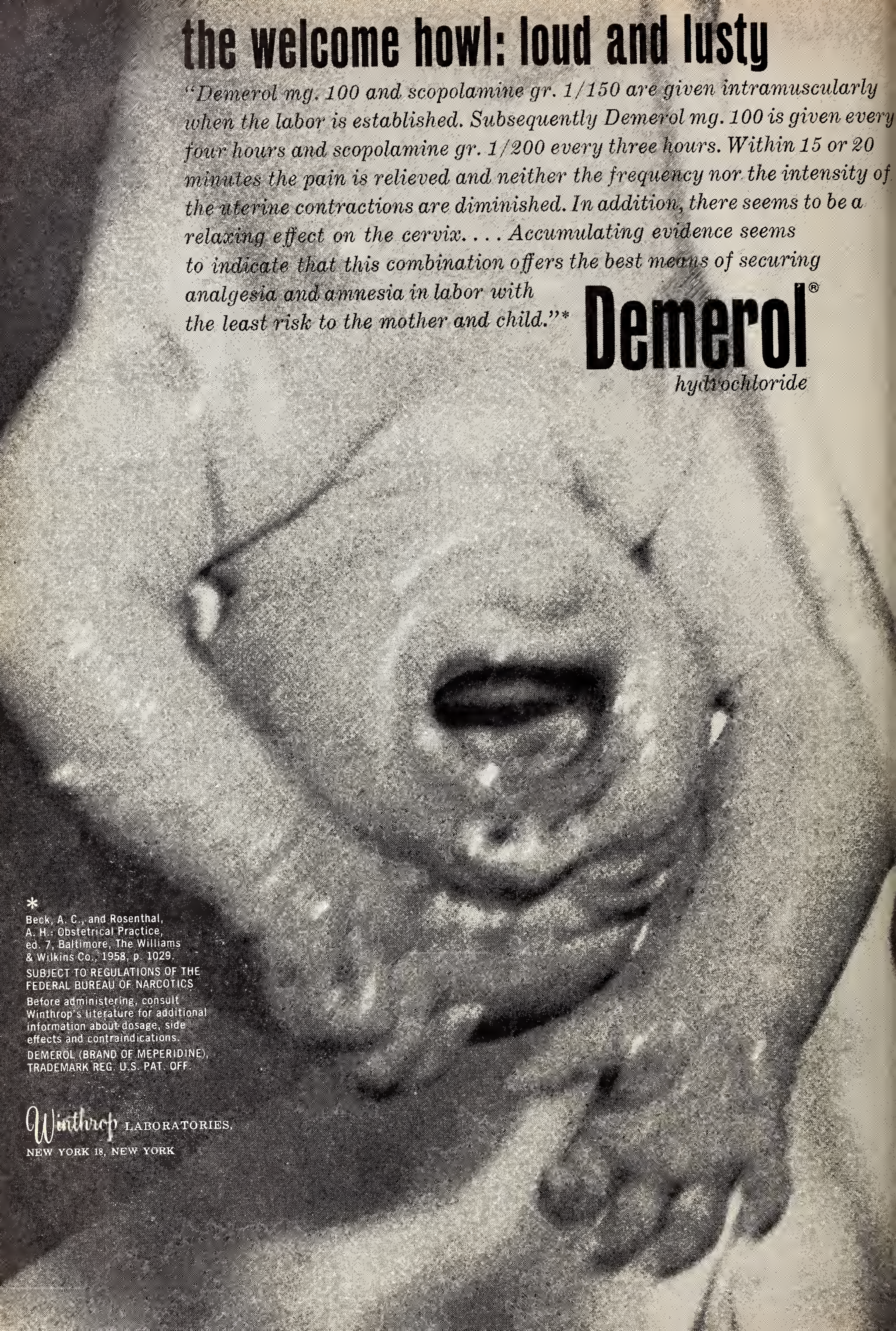
Robert N. Hammerstrom, M.D.
Minneapolis, Minn.

King, H. E. and Cooper, T. "Thrombocytopenia. A Clinical Analysis of 500 Cases." Postgrad Med 31:532, June, 1962.

PROLAPSE OF GASTRIC MUCOSA

Approximately 5% of all upper gastro-intestinal x-ray studies may demonstrate some prolapse of antral mucosa. The authors have presented ten cases wherein clear x-ray evidence of prolapse was found. The patients had significant upper abdominal distress and no other lesion could be found accounting for such

Continued



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Beck, A. C., and Rosenthal, A. H.: Obstetrical Practice, ed. 7, Baltimore, The Williams & Wilkins Co., 1958, p. 1029.

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distress. All of these patients had chronic problems with a minimum duration of two years and a maximum of ten years. In only one instance had a patient been hospitalized fewer than three times prior to operation for the condition.

The condition of prolapse of antral mucosa is identifiable solely by x-ray findings, since the lesion usually cannot be palpated at surgery, and it cannot be found by examination of the surgical specimen unless there has been incarceration and some strangulation of the mucosal tissue. The authors explain that in addition to prolapse of the mucosa through the pyloric ring, pyloric muscle spasm must also be present to produce the symptoms, and that it is for this reason that it is not palpable in the anesthetized patient or the gross surgical specimen.

The type of pain is generally chronic in nature but frequently may demonstrate a crisis of extremely severe nature occurring on a day to day basis.

Treatment of the ten cases consisted of pyloroplasty in four patients and gastrectomy in the remaining six. One of the patients treated by pyloroplasty experienced recurrence followed by relief after gastrectomy. The authors therefore recommend gastrectomy, and predict good to excellent results when the following conditions are met:

(1) There is clear radiographic evidence of prolapse (2) the patient has upper abdominal distress of a significant degree (3) there is no other demonstrable lesion (biliary tract disease, peptic ulceration, espohageal hiatal herniation, and the like)

Although prolapse of mucosa has frequently been seen on roentgenographic studies of the upper gastrointestinal tract, it appears from this report that attention must be paid to the possibility of pyloric spasm associated with prolapse producing epigastric pain. When a patient is properly evaluated, this may occasionally be a very important finding.

J. H. Strickler, M.D.
Minneapolis, Minn.

Custer, M. D., Hortenstine, J. C., and Lacy, E. W., "Clinical Significance of Prolapse of the Gastric Mucosa" Ann Surg., 155:681, May 1962.

GASTRIC POLYPS

The surgical treatment of adenomatous polyps of the stomach is unquestioned in the presence of obstruction, bleeding, or severe epigastric distress. The authors, however, feel that the problem of malignant potential of gastric polyps has never been satisfactorily clarified. With this in mind they have studied a series of 153 consecutive patients with gastric polyps seen at Massachusetts General Hospital.

The patients included 43 who died of an unrelated disease, in addition to 24 who had resection of the stomach because of carcinoma with incidental polyps. The remaining 86 had a primary diagnosis of gastric polyps.

The patients ranged in age from 33 to 88 years, the majority being in the seventh decade. Nineteen of them had pernicious anemia and 95% of those tested were achlorhydric.

Of most concern in the solution of the problem under study was the pathology. Histologically 10% of cases had small zones of atypicality in the surface of the polyps. Fifteen cases had extreme changes characteristic of carcinoma in situ. These changes were usually only observed in polyps larger than two centimeters in diameter. In 6 of the 15 cases with extreme changes there was an invasive carcinoma which was separate from the polyp. In none of the remaining 9 cases were there metastases to regional nodes or elsewhere. One of them had microscopic evidence of glandular tissue beneath and within the muscularis musoca and in perineural lymphatics.

Follow up of this series shows no evidence that adenomatous polyps progress to the usual infiltrative carcinomas or that the residual stomachs are more prone to development of carcinoma. Despite alarming surface changes the authors feel these polyps are biologically benign.

On the basis of these findings and conclusions the following suggestions are given for management:

Group I (Single or Multiple Discrete Polyps) If asymptomatic and the polyps are less than two centimeters in diameter, serial x-ray and gastroscopic inspections are adequate. If larger than two centimeters, or if adequate follow up is not possible, surgical management is indicated. Gastrotomy is done to eliminate unsuspected carcinoma or additional polyps. Polyps less than two centimeters, or larger ones with definite stalks, may be removed by polypectomy or segmental resection. A partial gastrectomy is indicated for sessile polyps, since one cannot exclude the possibility of polypoid carcinoma. Thus, in polyps of the distal stomach, subtotal resection with removal of adjacent nodes usually offers the best solution. In the proximal stomach local excision of the polyp and its mucosa is preferable.

Group II (Diffuse Localized Polyposis) Observation may be adequate for polyps less than two centimeters in size. If there is uncertainty regarding the nature of the lesion subtotal resection is indicated to remove the area involved by polyposis.

Group III (Diffuse Polyposis) Multiple Polyposis may mask a cancer. Usually a total gastrectomy is necessary. Occasionally a distal subtotal gastric resection may be possible if small polyps in the cardia or fundus can be handled by local excision or fulguration, with adequate patient follow up.

Considerable reassurance regarding the lack of malignant potential of the adenomatous gastric polyp per se would appear justifiable from the study of these data. The recommendations regarding management are reasonable and complete. One should have any tendency toward complacency somewhat tempered by the consideration that a gastric mucosa which is abnormal, as indicated by gastritis, alchlorhydria, lack of intrinsic factor, or the production of benign polyps, has an increased neoplastic tendency, similar to that commonly accepted as associated with polyps of the colon and rectum. Many surgeons will lean toward resection over polypectomy on the basis of having "been burned" by the disclosure of alarming malignant changes found in a seemingly benign polyp excised by polypectomy.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

Monaco, A. P., Roth, S. I., Castleman, B., and Welch, C. E., "Adenomatous Polyps of the Stomach" Cancer, 15:456, May-June, 1962.

End

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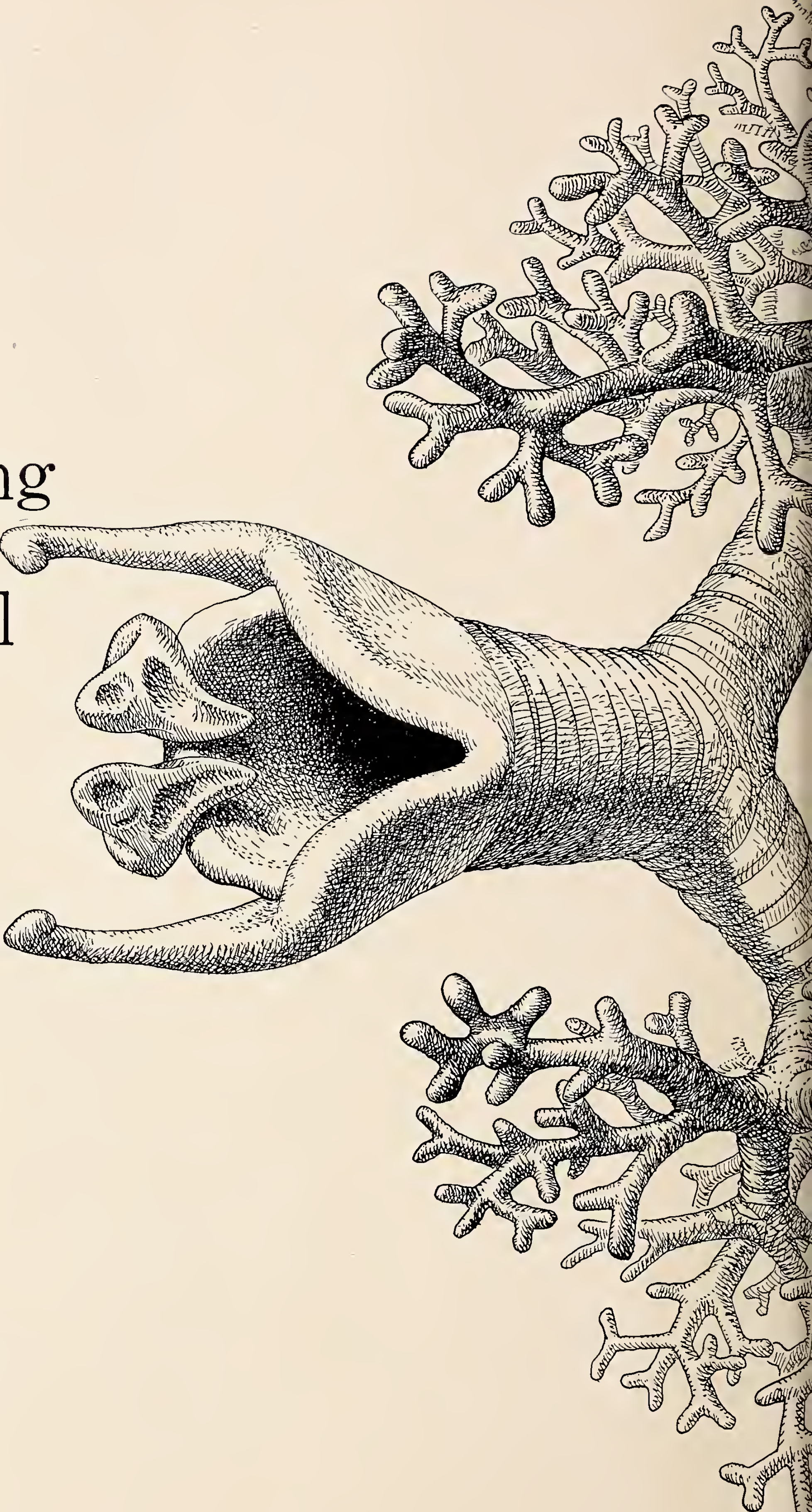

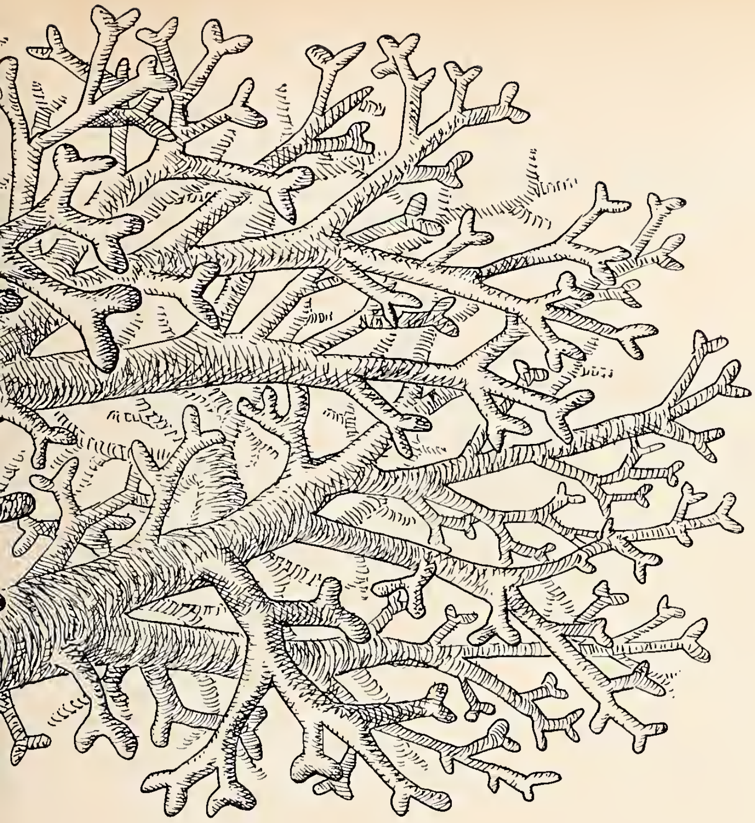

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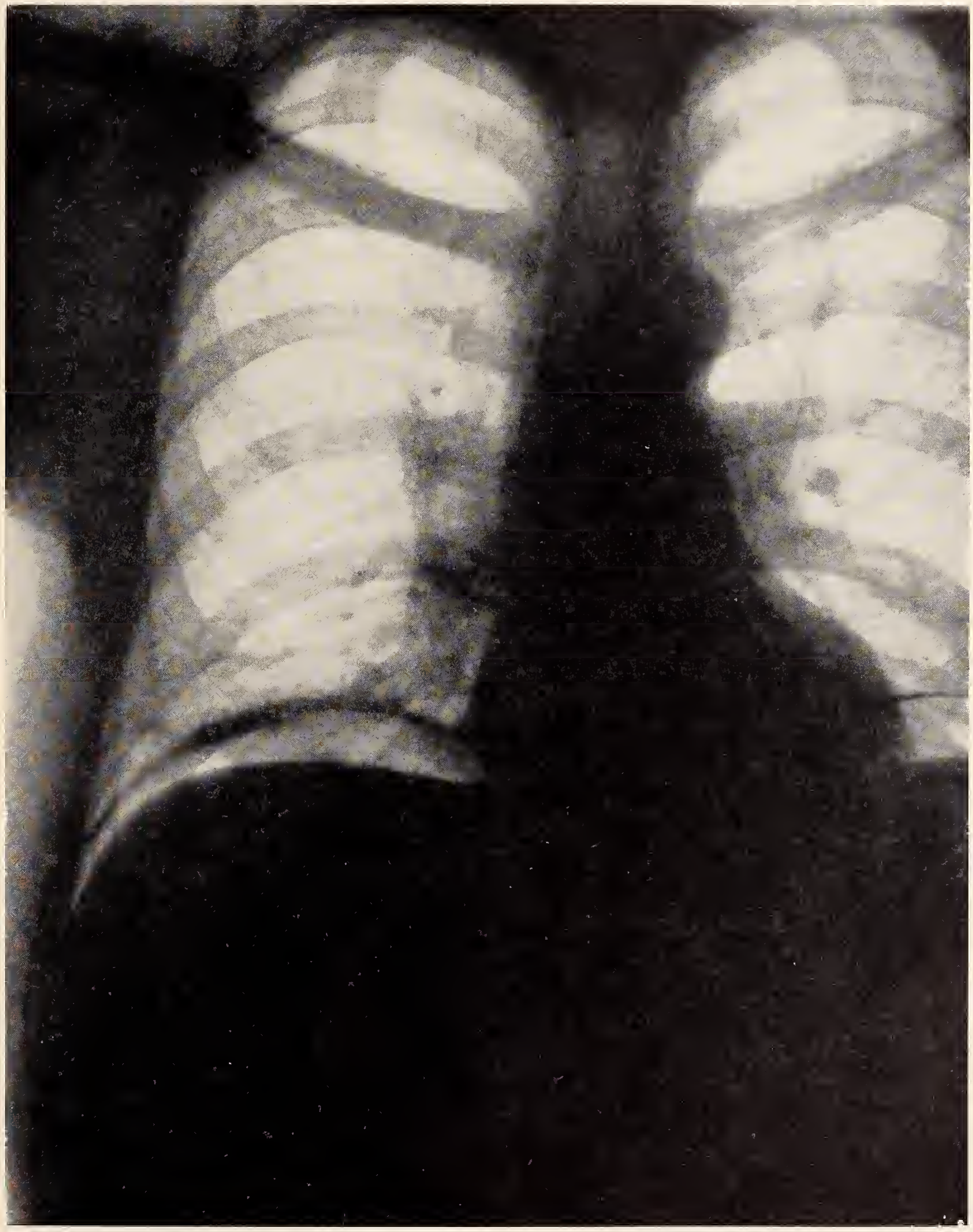

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1. Stevenson, L.E.: M. Ann. District of Columbia *30*:409 (July) 1961.

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M.D. Minneapolis

ANSWER: The majority of patients who have responded well to the program outlined will continued to obtain good results from monthly injections the year-round, eliminating the weekly injections during the season. Most patients will be willing to take the chance that this approach will be effective, although 15-20% will require a return to weekly injections the following year.

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ANSWER: Unfortunately, there is no satisfactory treatment for post-herpetic neuralgia. Some patients will respond to non-narcotic analgesics, especially if potentiated by a drug such as Thorazine. Similarly, Dilantin, is worthy of trial in refractory cases, although its mechanism of action is not clear. Various neurosurgical procedures, such as sectioning of nerve roots and tractomy, in cases involving the trunk, have given inconsistent results. Pre-frontal lobotomy has been tried as a last resort but with lasting improvement in relatively few patients.

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—Balzac—Pere Goriot

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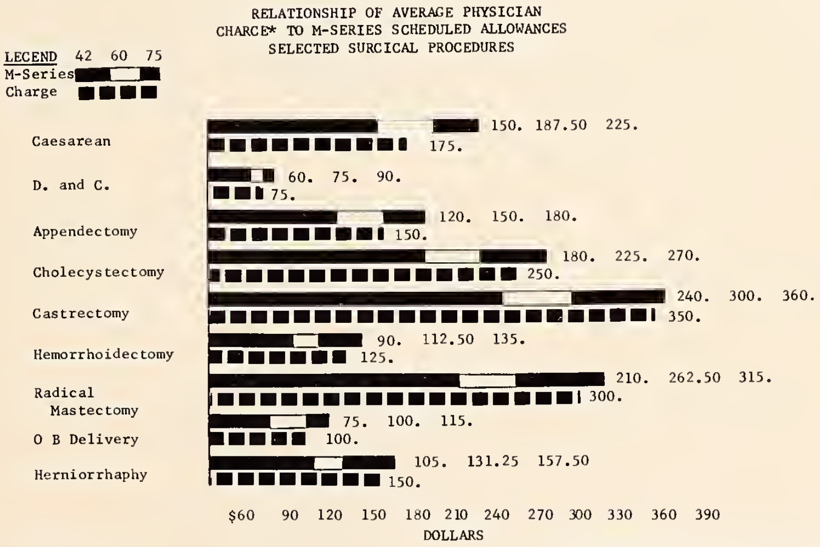
In implementing the program, it was necessary to attempt to arrive at a position which would provide fair and adequate allowances to the physican while remaining competitive at a cost the subscriber could afford to pay.

The first two of the following graphs will illustrate the relationship of the M-Series benefits to the average physician charge in the Great Lakes Region which includes such metropolitan areas as Detroit and Chicago. The third chart demonstrates the benefit relationship of the new M-Series with Plans A and B, using Plan A as a base.



STATISTICS 5/62

*MEDICAL ECONOMICS, February 12, 1962
Great Lakes Area pp. 108-125

Chart #1 Relationship of Average Physician Charges to M-Series Scheduled Allowances: Selected Surgical Procedures.

This chart, based on information contained in *Medical Economics,* February 12, 1962, demonstrates the relationship between the average physicians' charges for nine surgical procedures in the Great Lakes Area and Minnesota Medical Service M-Series Contracts. For example, the average charge for Caesarean Section is reported to be $175.00. In contrast the Minnesota M-42 Contract fee is $150.00; the M-60 fee is $187.50; and, the M-75 fee is $225.00. Each of the Minnesota Blue Shield M-Series Contracts has its own income-ceiling and its own fee schedule, and the purpose of each contract is to provide service benefits to subscribers within the income limits of their contracts at fees which are fair and reasonable for the service.

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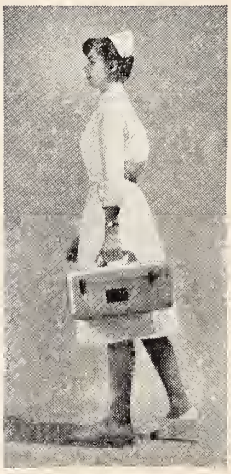

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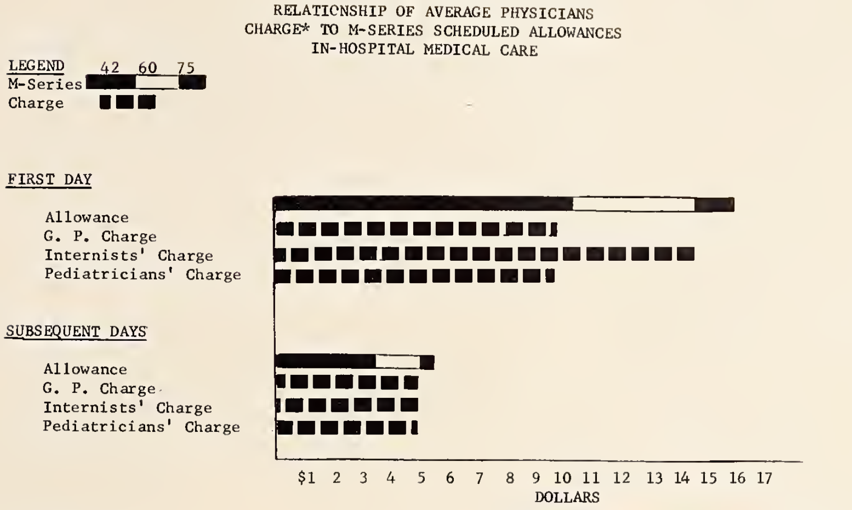

STATISTICS 5/62

* MEDICAL ECONOMICS, February 12, 1962
Great Lakes Area pp. 108-125

Chart #2 Relationship of Average Physicians Charge to M-Series Scheduled Allowances: In-Hospital Medical Care.

Chart #2 relates the average physician's in-hospital charge to the scheduled fee allowances of the three Minnesota Blue Shield M-Series Contracts. For example, the first-day charge by the general practitioner for in-hospital care, according to Medical Economics, is $10.00. Whereas, in comparison the scheduled allowance of the Blue Shield M-42 Contract is $11.25; for the M-60 Contract is $15.00; and, for the M-75 Contract is $16.50. Comparisons between average charges and contract allowances are also shown for subsequent in-hospital care.

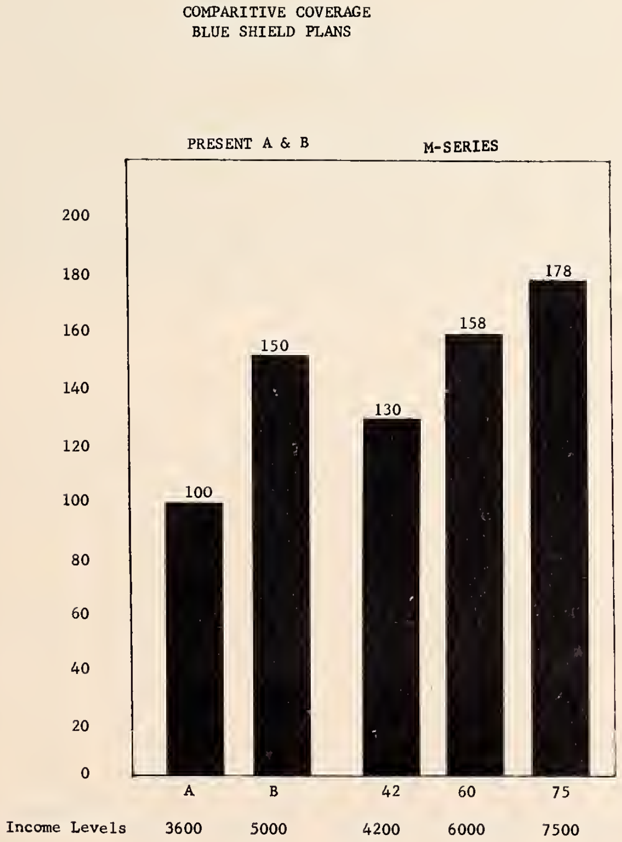

Chart #3 Comparative Coverage: Blue Shield Contracts.

A comparison is here made between Minnesota A and B contracts now in force and the new M-Series Contracts. This is a benefit comparison, using Plan A as the base of 100 per cent. For example, the new M-42 Series Blue Shield Contract provides 30 per cent more benefits than the standard "A" Contract.

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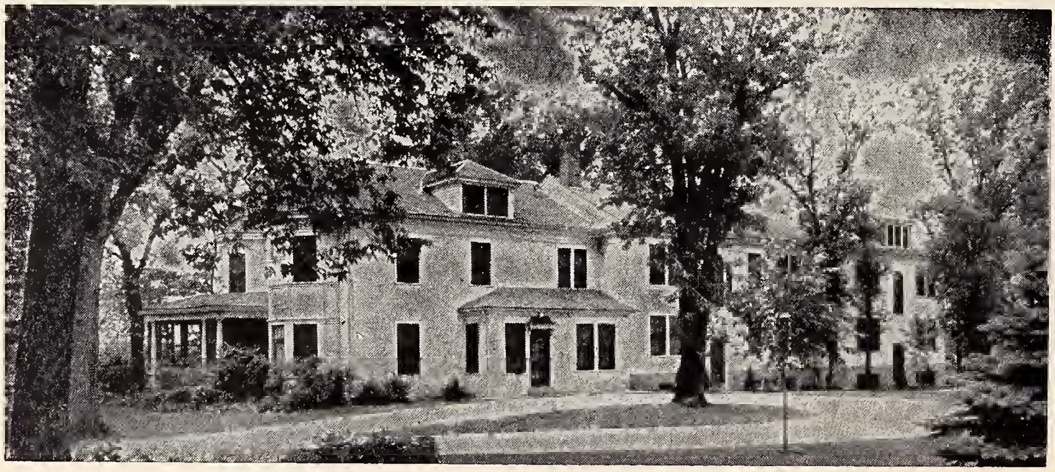

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Medicine
IN WRIGHT COUNTY, Part VII

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

Charles L. Flannigan,* was born in Syracuse, New York in 1848 and came to Minnesota with his parents in 1860. He graduated from the medical school of the University of New York in 1871 and settled in Waverly in 1878. He is supposed to have been the first physician in Waverly and also owned a drug store there. He had his office at the L. V. Kyte drug store, the forerunner of Ray Daigle's drugstore.

Beginning in January, 1879 *The Eagle* (Delano) carried an ad "The Model Drugstore of Wright County, Waverly, Dr. C. L. Flannigan, proprietor" and in April of that year we read in the same paper that "D. W. Flannigan, a brother of the good-natured doctor has everything that can be found in a good harness shop." A constable Flannigan mentioned in the same year may be the same brother, because he used the doctor's horse and buggy to chase witnesses.

In February, 1880 Mrs. Flannigan became very ill with "kind of a comatose fever" from which she died. During this trying period, Dr. Rounsevell of Delano looked after Dr. Flannigan's practice. In May he sold half of his interest in the drugstore to H. S. Granier of Dassell, "a practical druggist;" he gave the growth of his practice as the reason. As he was too busy to look after his children, he had taken them to Winona.

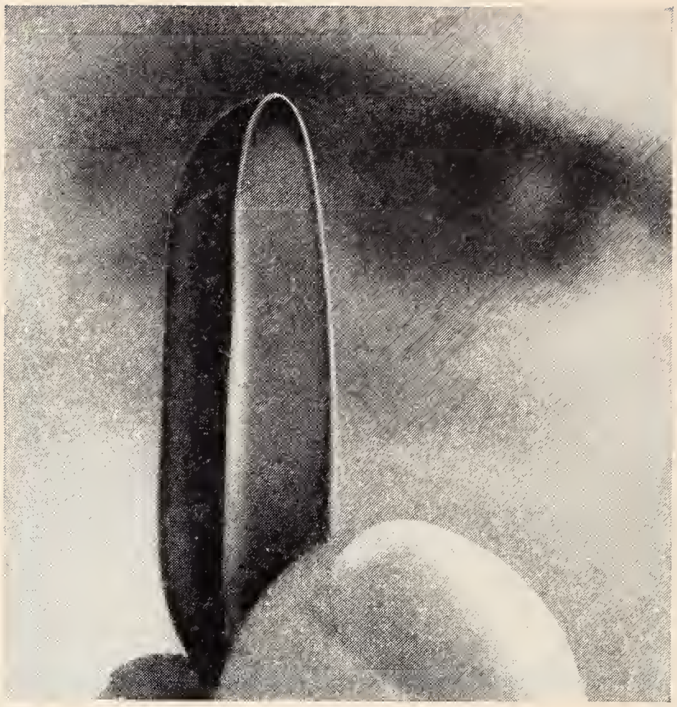
Very early in 1881 he embarked on a long trip to New York, Germany and other parts for the purpose of post-graduate study. He must have returned in early summer as in July he and L. V. Kyte were planning to erect a commodious building for a drugstore and postoffice.

In April or very early May, 1883 he moved to Minneapolis but came to Waverly every week to visit his many patients.**

He continued to visit Waverly professionally as late as 1887, but whether this was only when called by certain patients or in the form of regular visits is not known. In February, 1888 "Dr. C. L. Flannigan of Minneapolis, formerly of Waverly — a brother of com'r Dave Flannigan of Waverly — was married to Miss Louisa Heckmyre of St. Louis, at Omaha, Nebr. They will sail from

*There is some possibility that the two Drs. Flannigan are identical in spite of the different medical schools. Not enough is known about them to be sure that these are two different men.

To Be Continued



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Seattle to Japan and will be gone about a year, most of which he will use to study in Vienna, Berlin and Paris."

No further record could be found of him. It is not known when and where he died.

F. O. (S. O.?) Francis, came to Buffalo in 1885 and was listed there in the Official Medical Directory in 1886. He stayed there several years. The only other doctor in Buffalo, which at that time had a population of about 250, was Dr. R. O. Cady. He was no longer listed there in 1890.

He is no doubt identical with Dr. S. (Simeon?) O. Francis who came to Buffalo from St. Paul in May, 1885.† In August of that year he opened an office next to the postoffice.

Dr. S. O. Francis was born in Dudley, Indiana February 7, 1860. He graduated from the Minnesota College Hospital, Minneapolis in 1884, locating in St. Paul. He was licensed March 11 of that year. He joined the Ramsey County Medical Society in January, 1885. It is not known when he left Wright County, but it was probably about 1887 or 1888. In 1889 he moved to White Bear, Ramsey County.‡ He became a member of the Minnesota State Medical Society in the same year and rejoined the Ramsey County Medical Society in 1908.

Rudolph T. Germain, practiced at Buffalo a short time in 1898. He left some friends at Buffalo who spoke kindly of him. He graduated from Laval University, Quebec in 1896 and was licensed in Minnesota July 16, 1898. In 1903 and 1905 he is listed as practicing in Barnesville, Clay County and in 1909 in Spokane, Washington, where he resided in retirement as late as 1956.

Elam Stiles Gibbs, was one of the earliest physicians in Wright County. He may have come to Monticello very late in 1869, although probably not until 1870. He was born at Rome, Bradford County, Pennsylvania, May 1, 1847 and came to Minnesota with his family who were pioneer settlers in Freeborn County. He attended school at Albert Lea and began "reading medicine" with Dr. A. C. Wedge in 1867. Then he went to the medical department of the University of Wooster (Charity Hospital College), Cleveland, Ohio from which he graduated in 1869. After he graduated he practiced for about a year in Geneva, Freeborn County.* From Geneva he came to Monticello. His stay there at this time must have been relatively short because around 1871 or 1872 he was in Glencoe, McLeod County and from there he moved to Litchfield, Meeker County, to assist Dr. V. P. Kennedy in 1872 and 1873.** After that he practiced for a while independently in Litchfield. From there he went to Monticello although it is not known exactly when. However, we know that he was in Monticello by July, 1875.*

His name appears often in the newspapers from the middle 1870's on, usually reporting on some medical exploits. Thus, in December he and Dr. Cady cared for a little girl with membranous croup; the miraculous cure was credited to the unremitting care the child was given day and night.** In October, 1879 he was nominated for the position of coroner. In the early 1880's he owned a farm in Sherburne County and built a house on it. It is not surprising that he took an interest in local affairs — he was one of the directors of the school board in 1884 and president in 1887. He was still coroner in 1884 because he was paid for an inquest in November of that year.

Delano Eagle, Sept. 20, 1883 and Dec. 5, 1884.

†**Delano Eagle**, May 28, 1885.

‡See "Medicine in Washington and Chicago Counties," **Minnesota Medicine**, September 1938, p. 652.

*"Notes on Medicine in Freeborn County, 1875 — 1900" by Andrew Gullixson, M.D., **Minnesota Medicine**, December, 1948. p. 1341.

"Medical Men of Meeker County to 1900" by Harold E. Wilmot, M.D. (privately printed 1956). pp. 41-42, and **Minnesota Medicine 1958-59.

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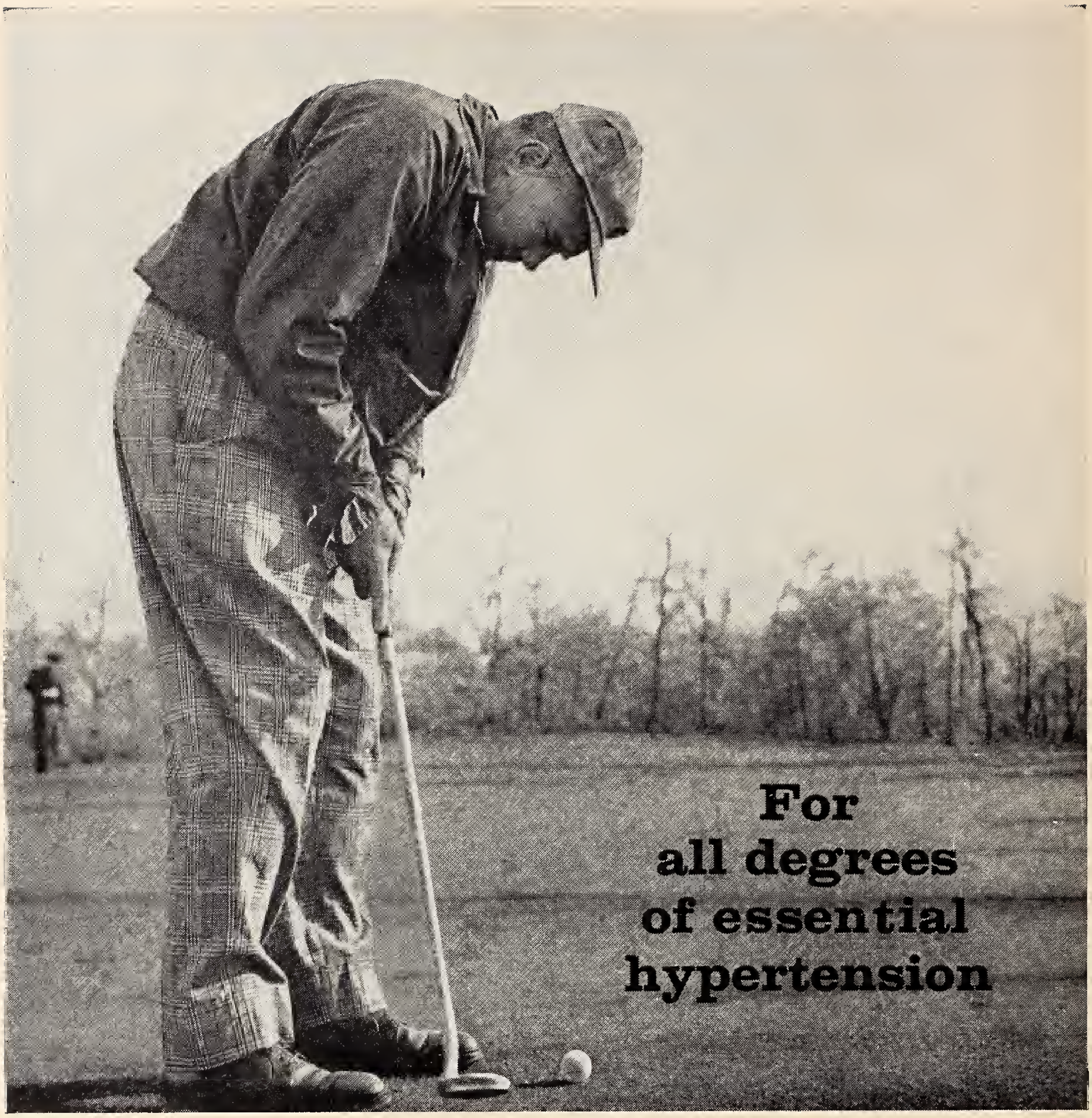

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[†]Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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Dr. Gibbs was licensed December 31, 1883 when the licensing act went into force. He practiced in Monticello about forty years and enjoyed a good reputation in the medical profession. He was well known throughout the northern part of the country. In the 1880's and early 1890's he was one of three physicians in Monticello, the other two being Drs. Lynch and Wakefield. He died in Monticello August 3, 1922 from cerebral hemorrhage at the age of seventy-six and was buried in Geneva, Freeborn County.

The Gibbs family became an influential one in Minnesota. The newspapers report in 1884 that State Treasurer Kittleson and family spent the 4th of July as guests with Dr. Gibbs. John L. Gibbs, who was Speaker of the House and at one time (1886) was a candidate for governor, was his brother.

Samuel Dexter Grant, although not definitely located in Wright County, should be included in this history as his practice covered the rural area of this county along the southern border. He is well remembered in the county for his tragic death caused by the explosion of the boiler of a steam thresher in Franklin Township, four miles south of Delano, September 24, 1874. Four people were killed in this explosion and two more injured. Dr. Grant's body was so badly mangled that only his head escaped mutilation. He was only forty-six years old.

Dr. Grant was born in Richmond, Maine in August, 1832. He received a diploma from the Philadelphia Association for Medical Instruction in 1851 and graduated from Jefferson Medical College in 1852. He came to Minnesota in 1856 and "took a claim" in the township of Minnetrista, Hennepin County. He came here for his health, suffering from some chronic lung trouble, and was fortunate in regaining his health. At the outbreak of the Civil War he moved to Philadelphia and enlisted; he was commissioned assistant surgeon in the 12th U. S. Infantry in 1862. After serving one year he returned to his claim. In 1867 he moved with his family to the village of Watertown, Carver County, where he resided until his death. In 1872 he bought a drugstore and was deputy county physician from 1873 to 1874. He apparently was a fine man and "generous to a fault." †

W. H. Hallowell, was in Rockford for a short time in 1885.‡ He came there from Minneapolis very early in June of that year to look things over. By June 11, he had brought his family to Rockford and lived in the Ruckoldt house on Plum Street. He opened his office at the drugstore. Nothing more is known of him.

To be Continued

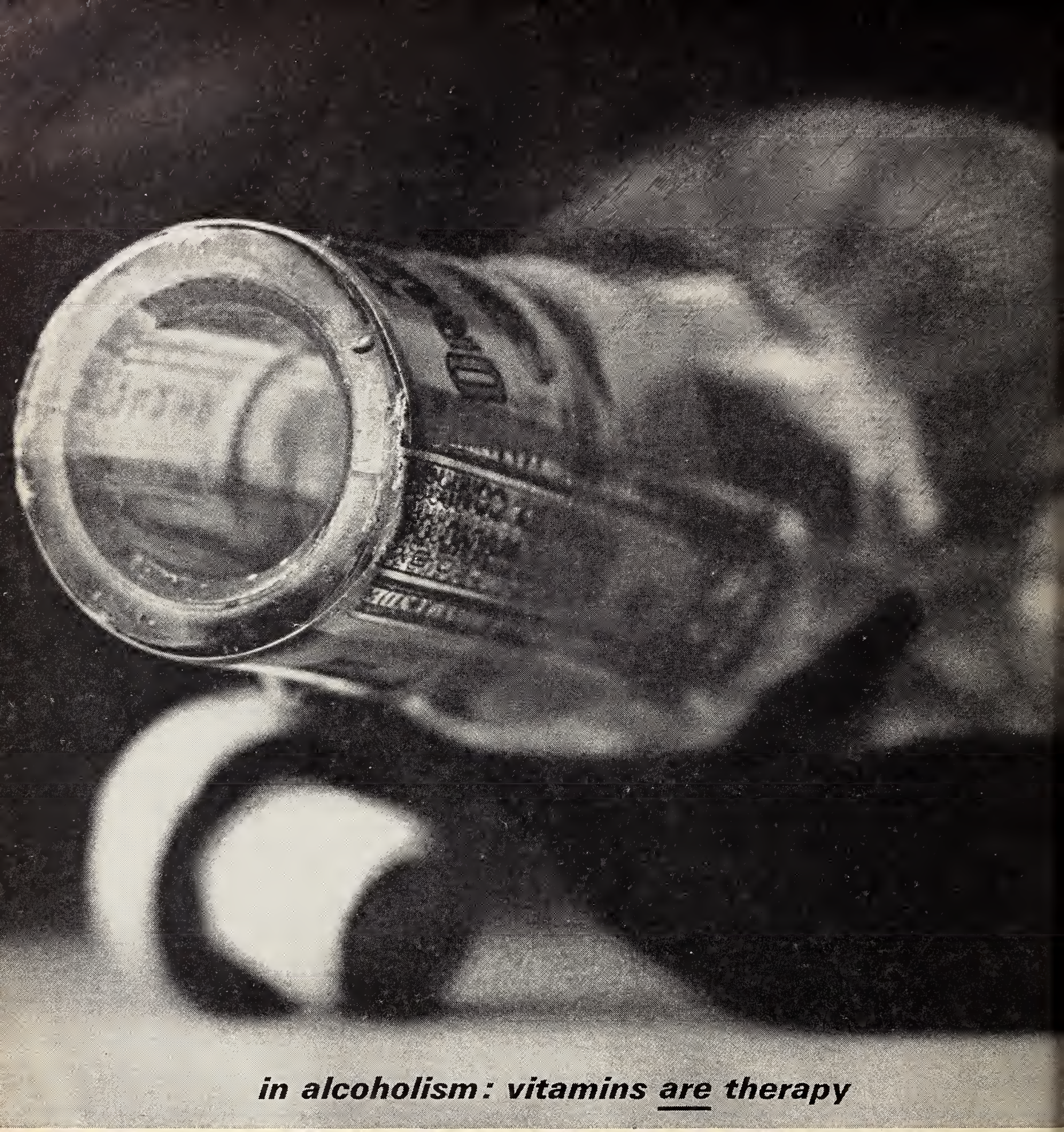
*__Wright County Times__ (Monticello) July 29, 1875 contained his professional card "Dr. E. S. Gibbs, physician and surgeon. Monticello. Office at Residence in lower town." It has been assumed that he remained in Litchfield until about 1880.

**__Wright County Eagle.__ December 11, 1879.

†**Transactions Minn. State Med. Society,** 1875; Necrology report pp. 105-107. "A History of Medicine in Scott and Carver Counties," **Minnesota Medicine,** June, 1948, p. 664.
The Northern Statesman, (Wright County), Oct. 1st, 1874.

‡**The Delano Eagle,** June 11, 1885 and July 2, 1885.

I hope I shall have leisure to make good.—*Shakespeare*



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Woman's Auxiliary

The following article "Guarding Your Husband's Health" by Theodore R. Van Dellen, M. D., Medical Editor of the Chicago *Tribune*, was first presented as an address at the National Convention of the Women's Auxiliary in Chicago on June 26, 1962. It is reprinted here because Minnesota Auxiliary members attending the Convention enjoyed this speech so much that they wished it shared with all the members throughout the state.

"Men are not nearly as tough as their wives think they are and the bride is twice as likely to be a widow by the time she is 45 as the bridegroom. Every year since 1900 more men than women have passed away. The number of women out numbered men for the first time in 1945. The excess was one per cent in 1950 and it is estimated to be four per cent by 1975. There were 1,382,000 more women in 1955 yet 200,000 more men died in all age groups.

"The surplus is more noticeable in the older age groups where the excess is 40 per cent. One half of all the women over 65 are widows. This is not true elsewhere and this statistical postmortum may have prompted someone to say 'Someone is tampering with the U. S. male.'

"Why has this change taken place? Women are not exposed to war, competition, and many occupational hazards. They adapt better to stress by utilizing an inherent safety valve known as tears and back fence discussions. In addition, they take better care of themselves and are more willing to seek medical care when ill. This will explain why most of our patients are women.

"Meanwhile, there has been a 30 per cent increase in cardiovascular disease during the past 20 years among men in the 45 to 54 age group. During this period the rate has declined 30 per cent among women. Cancer is not a problem until age 65 but heart trouble is number one on the list at an earlier age. Accidents are twice and suicide three times more common among men. Apparently men adapt less well to stress and tension of modern life.

"But a wife can prolong the life of her husband provided she knows her man, emotionally, mentally, and physically. Her best bet is to select a husband with long lived and otherwise healthy ancestors, of even temperament, slow to anger, lean, emotionally mature, sensible, and inclined to moderation.

"Since this type of husband is difficult to find most women must play the rest of the course by ear. There are certain conditions that increase hubby's risk of developing heart disease, high blood pressure, cancer, and the remaining dozen specific killers and disablers. The majority of these must be recognized and brought under control during the mid-forties in order to lessen the hazards of the road ahead. He should be encouraged to have a physical examination to detect the risk factors such as an elevation of blood pressure, too much cholesterol in the blood, over-weight, and habits conducive to bad physical and mental health.

"That first physical examination is a major hurdle and the best plan is an all out assault. There is safety in numbers and I believe that it should be a joint venture. Most physicians hesitate to ask a colleague for an examination for a number of reasons. They may, for example, hate to spend the time, be seen in their competitors office, or tell him their problems. On the other hand, if the Woman's Auxiliary insist that such and such a hospital have healthy staff members, the husbands may find the excuse they need to follow through with the examination. Use subterfuge if need be but avoid nagging unless you want to be a widow and don't tell him he is not as young as he was.

"Having a husband is a good investment and having a healthy husband over a long period of time is tops.

"The second step is to correct any defects that are uncovered or obvious even without the examination. Get his weight down. This may be difficult to do if his or the family's eating habits are geared to put on rather than to maintain normal weight. Many men eat well during the day and there is no need to put on a culinary show when he gets home unless he is too thin. Help him to lose weight even though it means self discipline on the part of the wife. I refer here to the woman who is too stout, who loves to eat, and is not a good example of what a physicians wife should look like.

"This brings us to the third rule. The wife should do her best to prepare a balanced diet that contains the basic foods. She should insist also in good dietary habits that will help the old boy avoid obesity.

Continued

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"The fourth rule involves cholesterol. This is mentioned because many studies have been reported showing that there are certain conditions that increase the risk of developing a coronary. They are hypertension, overweight, and an elevation of the blood cholesterol level. There is a relationship between fat in the diet and hardening of the arteries. This does not mean that the cholesterol level is governed by diet alone; it means that diet is one factor. Half the cholesterol in the blood is manufactured by the body. The rest comes from the diet but what the body does with this fresh intake varies in different individuals. It is the quality and not the quantity of the fat that also plays a role. Fats contain a combination of saturated fatty acids such as palmitic, stearic; polyunsaturated fatty acids such as linoleic; and nonunsaturated acids such as oleic.

"The level is raised by the saturated solids that are found in animals, butter, cream, cheese and eggs, and coconut oil. Not fish. The level is lowered by the unsaturated, especially linoleic as found in safflower, corn, soy, cottonseed, peanut, sesame, sunflower. Also in whale, herring and fish oils. Oleic acid is found in olive oil and does not increase or decrease the level.

"The cholesterol level can be lowered by eating a diet low in saturated fatty acids over a long period of time. A moderate amount of the polyunsaturated fatty acids also is advisable. The latter is encouraged by utilizing the various oils in cooking or taking corn or safflower oil straight. Other methods include hormones such as estrogens, thyroid, dextro-thyroxine, aluminum nicotenate, vegetable steroids as sitosterol. MR29 is out —lowers level but caused serious toxic reactions such as cataracts, baldness, dryness, impotence, and abnormal liver tests.

"The level also is influenced by exercise, stress, clotting mechanism, and weight.

"Rule number five is moderation in all things and number six is a physical fitness program. There is no doubt in my mind that physical fitness adds years to life. Any man can remain in good condition from college to age 80 by exercising daily. This means walking, hiking, riding a bicycle, swimming, rowing, and playing volley ball, tennis, or golf. Three minutes of calesthenics also helps. I use a rowing machine at least five mornings a week as a 'waker upper.'

"Rule number seven is to stop him from killing himself to make you a rich widow. No one ever died of hard work but it is well to remember that there is always a way to do it easier. This is the only way to combat over-fatigue. There is always a possibility that too much work will lead to staleness, boredom, or getting into a rut. It is well to watch out for a little known disease that afflicts many husbands — work obsessions.

"There are many solutions to this problem. Dr. Fishbein, for example, finds culture an excellent antidote for a lagging brain. He relaxes with art, literature, music, drinking, travel, reading, and other fine things in life.

"Other husbands may need more office help, assistants, or may find the solution to their problem in partnerships or a change in scenery. Leave the country for a tour of duty in the Congo, ship doctor, post graduate work. The practice will be there when he comes back. Let his patients get an idea what it is going to be like after he dies.

"It is well to remember however, that the wife should not supress a man's drive until we find out if it is harmful. David Harum said 'A certain number of fleas is good for a dog.' It keeps us on our toes. The itch is to get on with the job. The bad feature of drive crops out in those men who are looking always for new worlds to conquer. They are never satisfied, have no time to rest between chores or to dwell on the satisfaction that comes from achievement. The greatest satisfaction in life often comes from being satisfied.

"The ninth suggestion centers about the emotional and psychic aspects of life. It is here that the wife plays an important role in prolonging the husband's life. A healthy and vigorous man is able to rise above ordinary aches and pains but anger, frustration, and gloom will sap his strength. Anger for example, has been acknowledged for centuries to be the most influential agent in precipitating angina and sudden death. Hostility raises the blood pressure, constricts blood vessels, increases gastric acidity, churns up the stomach and raises the blood sugar. Beware of hyperreactors and also the industrious man whose dreams of greatness and security come to ruin, especially when it creates emotional upheavals varying from depression to rage. Many men with attitudes of superiority and omnipotence hate to face reality and resent any loss in status, or failure to achieve their goals. Many of these men are physicians who achieved through considerable intellectual and physical effort. They can't be told a thing, especially when the advice is coming from a woman with lesser education or training.

"The wife can be a wonderful helpmate by maintaining a calm and relaxed household and cultivating a home in which love and trust thrive. The biblical laws and regulations that govern marriage cannot be improved so far as promoting health and happiness.

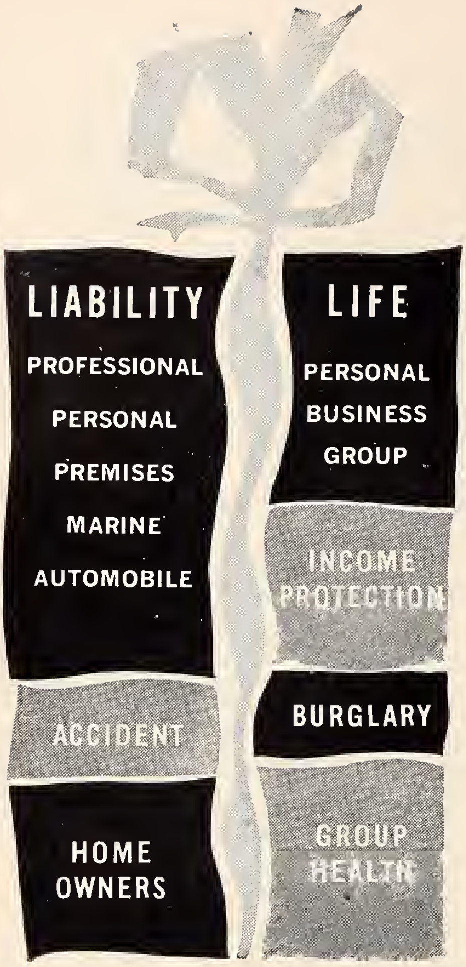
"I am not trying to suggest that the wife become a servant and will not discuss how the physician should treat his wife or what he should do to become a better husband and father. I'll mention a few things that irritate some men at home and might shorten his life. Try not to needle him or point out his mistakes during breakfast or dinner and avoid arguments before retiring or when he leaves home in the morning. If you insist on having the last word, some one of these days you will have it.

"Don't think of things to keep him busy when he gets home. Most physicians work 12 hours a day and it is the little chores at home that bother him the most. He may be a fool but never let him know it. This is the easiest way to raise his dander. Compromise once in awhile and give him his way.

"Meanwhile spare him by spacing social engagements and try to avoid too many public dinners. In general avoid contacts that create worry, anxiety, insecurity, and emotional disturbances. Help him in his work by being a diplomat when talking to patients or discussing medical problems. The household can be tuned to his schedule without upsetting the routine of the family. For example: feed the children early when he is delayed so that everyone can retain their good humor. Let him sleep when the opportunity presents itself and keep the house quiet.

"Bring into his life thoughts and ideas that he is not likely to pick up during his daily hospital rounds and office visits. A cocktail before dinner can bring relaxation and conviviality. Be sympathetic with his challenges and problems at this time. There is no better way to blow off steam than to ventilate and discuss."

End.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Meetings and Announcements

OCTOBER

Medical College of Georgia Course on Clinical Pathology in Medical Practice, October 23-25. Contact: Dr. Claude-Starr Wright at the college in Augusta.

College of American Pathologists, North Central Section, and Wisconsin Society of Pathologists Meeting, Marquette University School of Medicine, Milwaukee, October 26-27. Contact: Wisconsin Society of Pathologists, Milwaukee.

American Rhinologic Society Course "Expanded Surgery of Nasal Septum" at Loma Linda University School of Medicine, Los Angeles, October 29-Nov. 1. Contact the Society in Chicago.

American Cancer Society 1962 Scientific Session, Biltmore Hotel, New York, October 22-23. Contact Society in New York City.

University of Illinois College of Medicine Department of Otolaryngology Postgraduate program October 20-26. Contact the University.

American College of Chest Physicians Council Postgraduate Course on Clinical Cardiopulmonary Physiology, October 22-26, Knickerbocker Hotel, Chicago. Contact American College of Chest Physicians, Chicago.

St. Louis University School of Medicine Alumni Founders Week October 18-22. Contact: William Einspanier, 1402 S. Grand Blvd., St. Louis.

The American Fracture Association Annual Meeting, October 20-25, Huntington Sheraton Hotel, Pasadena. Contact: H. W. Wellmerling, M. D., American Fracture Assn., Bloomington, Illinois.

American College of Gastroenterology Convention, Morrison Hotel in Chicago, October 29-31. Also Postgraduate Course in Gastroenterology will follow Convention November 1-3. Contact: College, 33 West 60th St., New York.

Omaha Mid-West Clinical Society Postgraduate Assembly in Omaha's Civic Auditorium, October 29-November 1. Contact: Harry McFadden, M. D., 1613 Medical Arts Bldg., Omaha.

American Academy of Pediatrics Meeting at the Palmer House, Chicago, October 27-November 1. Contact: E. H. Christopherson, M.D., 1801 Hinman Ave., Evanston, Illinois.

American College of Physicians Postgraduate Course October 29-Nov. 2 on Rheumatic Diseases, Boston Mass. Contact: Edward C. Rosenow, M. D., American College of Physicians, Philadelphia.

NOVEMBER

National Society for Crippled Children & Adults Convention, November 16-20, Hotel Fontainebleau, Miami Beach, Florida. Contact: Society, 2023 West Ogden Avenue, Chicago.

New York University Medical Center Course on Atherosclerosis and Hypertension, November 8-10. Write: Office of Dean, New York University Post-graduate Medical School, New York.

American College of Chest Physicians Session at Ambassador Hotel in Los Angeles, November 24-25. Contact: Murray Kornfeld, 112 E. Chestnut Street, Chicago.

Medical Society of Milwaukee Conference, Milwaukee County Hospital, November 14-15. Contact: Joan McGucken, 756 N. Milwaukee Street, Milwaukee.

New York University Medical Center Course on Surgical Rehabilitation of Arthritic Deformities, November 13-16. Contact: New York Medical School.

Southern Medical Association, Section of Ophthalmology Meeting, Miami Beach Florida, Fontainbleau Hotel, November 12-15. Contact: Dr. Albert Esposito, First Huntington National Bank Building, Huntington, West Virginia.

First Annual Conference on Medical Practice Management, November 1-2, Flamingo Hotel, Las Vegas, Nevada. Contact: Nelson Young, 420 Madison Theatre Building, Detroit, Michigan.

American Rhinologic Society Meeting, Statler Hilton Hotel, Los Angeles, November 1-2. Write: The Society, 2210 Lloyd Center, Portland.

Rocky Mountain Medical Journal State Medical Editors Conference, November 3-4, Denver Hilton Hotel, Denver, Colorado. Contact: Publication Office, Denver.

American College of Gastroenterology Course, Morrison Hotel, Chicago. November 1-3. Contact: College in New York.

American Society of Otology Meeting, Chase-Park Plaza Hotel, St. Louis, Missouri, November 8-10. Also, Meeting on November 7-9 in Columbus, Ohio, The Neil House. Contact: Paul A. Younge, M. D., 1101 Beacon Street, Brookline, Mass.

Ninth Annual Meeting of The Academy of Psychosomatic Medicine, November 1-3, Minneapolis, Radisson Hotel. Contact: Dr. Bertram Moss, 5 E. Washington, Chicago, Illinois.

DECEMBER

Hahnemann Medical College & Hospital Symposium on "Medical Considerations in the Surgical Patient," December 12-14, Sheraton Hotel, Philadelphia. Contact: Wilbur W. Oaks, M.D., 230 North Broad Street, Philadelphia.

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ANNOUNCEMENTS

New York Heart Association announces the establishment of a Homer W. Smith Research Fellowship in Renal Physiology totalling $60,000 beginning July 1, 1963. Nomination for fellowship should be in form of a letter from the chairman of the sponsoring department institution, accompanied by biographical data on the proposed fellow, a bibliography of his research, and a brief discussion of his scientific interests and achievements that would qualify him for the award. Nominations must be received before November 1. Contact: New York Heart Association, 10 Columbus Circle, New York.

American College of Physicans Post-graduate courses:
October 20-Nov. 2 — "Rheumatic Diseases" — Robert B. Brigham Hospital & Peter Bent Brigham Hospital, Boston.
Nov. 13-17 — "Endocrinology and Metabolism" — Johns Hopkins Hospital, Baltimore.
December 3-7 — "Psychiatry for the Internist" — University of Southern California, Los Angeles.

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis; October 22-November 9; November 26-December 14.

University of Minnesota medical continuation courses; October 29-November 2 on Radiology; November 14-16 on Opthalmology; November 15-17 on Orthopedics; and November 29-December 1 on Cardiovascular Diseases; January 7-11 Introduction to Electrocardiography; January 7-11 Proctology. For further information write 1342 Mayo Memorial, University of Minnesota, Minneapolis.

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1 "significant hearing improvement" occurred with Arlidin in 32 of 75 patients with recent onset hearing impairment due to labyrinthine artery ischemia.

Rubin, W. and Anderson, J. R.: Angiology 9:256, 1958.

3 Arlidin "appears to be one of the most satisfactory [vasodilators], having the advantages of minimal side effects, being well tolerated and possessing a sustained action" in improving circulation of the inner ear.

Seymour, J. C.: Laryngology & Otology 74:133, 1960.

The next scheduled Part I examination of the American Board of Obstetrics and Gynecology will be held at various examining centers in the United States on Friday, December 14, 1962. Current bulletins may be obtained from: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

Trustees of Caleb Fiske Fund of the Rhode Island Medical Society announce essay contest open to any Doctor of Medicine with a cash prize of $500. Subjects chosen are "Etiological Factors in the Development of Congenital Anomalies" and "Progress in the Relief of Hearing Defects." Entries must be type-written, double-spaced and not exceed 10,000 words. Must be submitted by December 11, 1962 to The Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence, R. I.

The American Thoracic Society offers grants for research in respiratory diseases, including tuberculosis. Deadline for applications for the grant year beginning July 1, 1963 is December 15, 1962. Write: American Thoracic Society, New York.

A new 30 minute medical radio series, featuring members of the University of Illinois Medical Center campus staff will debate on WLS, beginning Sunday July 29, at 11:30 a. m.

Medical Postgraduate Conferences, State University of Iowa: November 7-8 Institute on Abnormal Newborn, November 16 Otolaryngology, November 13-15 Federal Aviation Agency Medical Seminar, November 30 Cardiac Diseases and Respiratory Diseases. Contact: College of Medicine, Iowa City, Iowa.

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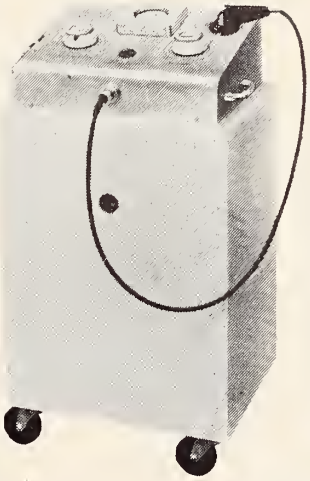

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2 vascular insufficiency of the labyrinth is an important etiologic factor in sudden perceptive deafness . . . "vasodilators [Arlidin] are of considerable value."

Wilmot, T. J. and Seymour, J. C.: Lancet 1:1098, 1960.

4 early cases of sudden perceptive deafness should be treated by immediate stellate block "supplemented by the most effective vasodilator drug [Arlidin] . . . energetic measures to retain blood supply to the inner ear are imperative."

Wilmot, T. J.: J. Laryngology & Otology 73:466, 1959.

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Sheehy, J. L.: Laryngoscope 70:885, 1960.

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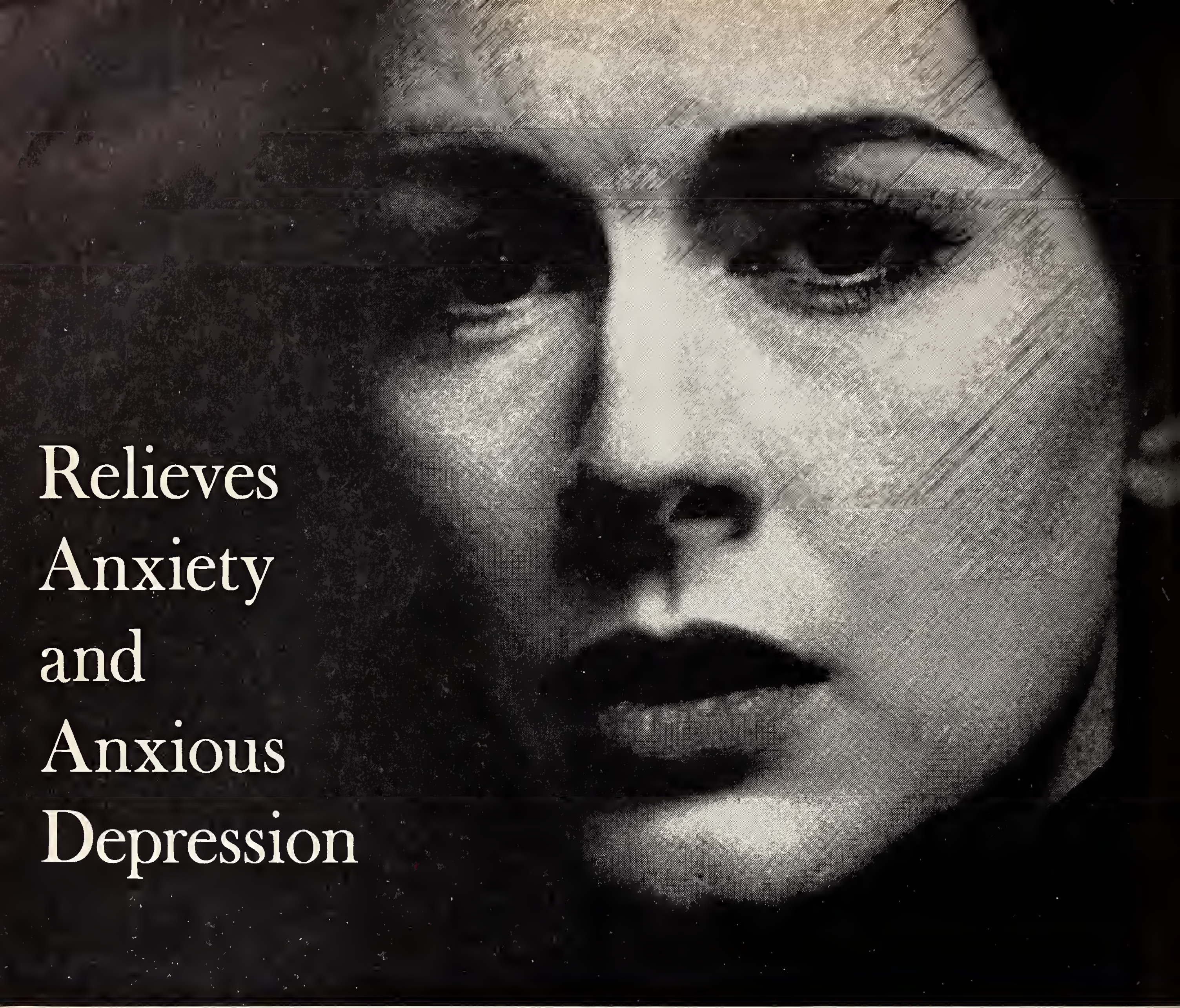

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In Memoriam

FRED P. STRATHERN

Dr. Fred P. Strathern, 93, practicing physician in St. Peter for 50 years, died August 24th, at his home. He was born in Rich Valley, Minnesota, and obtained his degree in medicine from the University of Minnesota. Dr. Strathern was widely known for his 40-year fight against tuberculosis. In 1948 he received an award from the State Christmas Seal Organization for his work in TB.

He held every office in the Southern Minnesota Health Association, was a past president of the Nicollet-LeSueur Medical Society, past president of the State Health Association, a member of the Civic and Commerce Association of St. Peter, was a City Health Officer for 25 years, a member of the St. Peter School Board, a member of the Nicollet Lodge No. 54 AF & AM, St. Peter Chapter No. 22 Arch Masons, Ivanhoe Commandery No. 31 Knight Templar and Zurah Shrine of Minneapolis and was the oldest living alumnus of the University of Minnesota. He was Life and 50 Club member of the Nicollet-LeSueur Medical Society and Minnesota State Medical Association and a member of the American Medical Association.

He is survived by his son, Dr. Carlton S. Strathern and a daughter. Dr. M. L. Strathern of Gilbert, Minnesota is a brother.

HUGH O. WILLIAMS

Dr. H. O. Williams, 78, died July 31 at Mankato. Dr. Williams had spent nearly his entire life in Lake Crystal, having come there when he was one year old. He received his degree in medicine from Marquette University and was recently honored by the University by being given a membership in its 50 Year Club.

Dr. Williams was a 50 Club member of the Blue Earth County Medical Society and the Minnesota State Medical Association. He was also a member of the American Medical Association, the Bethel Lodge 103 and Eastern Star. A student of the Welsh Language, he was a life member of the Gymanfa Ganu Association (Welsh musical organization of Canada and the United States).

He is survived by his two daughters.

JOHN H. LEEBENS

Dr. John H. Leebens, 80, died August 20, in Minneapolis. He was born in Fulda and received his degree in medicine from the University of Illinois. Dr. Leebens practiced medicine in Lismore, Minnesota until 1932 when he retired due to ill health.

He is survived by his wife, four sons and two daughters.

Board of Medical Examiners

AITKIN COUNTY WOMAN AND MINNEAPOLIS BARTENDER SENTENCED FOR ABORTION

Re: State of Minnesota -v- Darlene Schoppert
State of Minnesota -v- Leo Ritt

On July 10th, 1962 Darlene Schoppert, 32, Route #3, Aitkin, Minnesota was sentenced for the crime of abortion by the Hon. Irving R. Brand, Judge of the District Court of Hennepin County, to a term of not to exceed four years in the State Reformatory for Women at Shakopee, Minnesota, the execution of the sentence being stayed by the Court, however, and the defendant being placed on probation for a period of four years. On the following day, July 11th, Judge Brand sentenced the defendant Leo Ritt, 39, 1500 LaSalle Ave., Minneapolis to a similar term in the State Prison at Stillwater and then also stayed the execution of the sentence and placed him on probation for four years. Both defendants had been charged in separate informations in connection with the same crime, the defendant Schoppert pleading guilty before Judge Brand on June 8th and the defendant Ritt entering a guilty plea on June 11th.

The defendants were arrested after a 29-year-old unmarried Minneapolis woman was hospitalized on May 14th, 1962 at Minneapolis General Hospital, at which time she admitted that she had submitted to an abortion. Further questioning of the patient by investigators revealed the facts to be as follows: On May 5th, 1962, being convinced that she was pregnant as a result of an examination by a physician, the woman mentioned her condition to the defendent Ritt, who was a bartender at a Nicollet Avenue bar and cafe which she had frequented for the past two years. As a result of this conversation he telephoned her that evening in order to make inquiry in regard to the amount of money that she would be able to pay for an abortion, informing her that it would cost $300. After borrowing the money from a loan company, the woman paid it in cash to the defendant Ritt at the bar and cafe on May 10th. That evening at 10:30 p. m., pursuant to arrangements made in a telephone conversation, the defendant Schoppert arrived at the woman's Lake Street apartment and inserted a catheter. Three days later when the patient became ill she first entered a private hospital but requested to be transferred to Minneapolis General Hospital when she learned that her hospitalization insurance would not cover this type of illness.

The defendant Ritt admitted that he had received one-half of the $300 fee which was paid for the abortion. He also stated that he was acquainted with the abortionist due to the fact that she was formerly employed as a waitress in the bar and cafe where he presently worked as a bartender. Although the defendant Schoppert resides near Aitkin she will be under supervision of Hennepin County probation personnel. She has no medical training and holds no license to practice any form of healing in the State of Minnesota.

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Physician's Diary

Dr. Roland Beckering of Edgerton recently spoke and showed colored slides of his experiences with the U. S. Public Health Service in Alaska at a meeting of the Southwestern Minnesota Medical Society. **Dr. John A. Spittell** of the Mayo Clinic spoke on Vascular Clues to Systemic Disease.

* * *

Dr. V. A. Schulberg of Aitkin has joined in practice **Dr. Joseph E. Halpin** of Rush City, and **Dr. Lawrence D. Hildebrand** has become associated with the Breckenridge Clinic.

* * *

The Life Insurance Medical Research Fund awarded three grants recently to three institutions in Minnesota. One to St. Barnabas Hospital, Minneapolis, **Dr. L. O. Pilgeram** for research on the turnover rate of fibrinogen in human vascular disease. Another to the University of Minnesota Medical Schools, **Dr. Richard A. Dewall,** for research on perfusion techniques for open intracardiac surgery, and the third to the University Medical School, **Dr. Richard W. Von Korff,** on the chemical heterogeneity of fibrinogen fractions.

* * *

Dr. Arthur L. Arnold of Albert Lea has been appointed the full-time psychiatrist of the Southern Minnesota Mental Health Center in Albert Lea. Dr. Arnold replaces **Dr. Norman Berkwitz.**

* * *

Dr. Bayard T. Horton, president of the American Association for the Study of Headache and consultant in medicine in the Mayo Clinic, attended the International Congress for Internal Medicine at Munich, Germany in August where he gave a special report on temporal arteritis.

* * *

Dr. Robert Pierce of North Mankato has opened offices in the Good Thunder Medical Center.

* * *

Dr. Frank H. Krusen, president of the Sister Elizabeth Kenny Foundation, Minneapolis, was made an honorary member of the University of Chile Faculty of Medical Sciences at Santiago.

* * *

Dr. R. F. Pierson of Slayton was recently honored by the government for his twenty years of service in giving physical examinations to selective service inductees.

* * *

Dr. and Mrs. Titus Kreuzer, formerly of Marshall and now with the Veterans Administrative Hospital, have returned from a trip to Europe and the Scandinavia countries.

Dr. E. C. Mitchell of Mound has been elected chief-of-staff of the Watertown Community Hospital medical staff. **Dr. James W. Bratholdt** of Watertown was named vice chief-of-staff and **Dr. Robert G. Gildersleeve** was selected secretary-treasurer.

* * *

Dr. Robert W. Hollenhorst, Mayo Clinic, was elected president of the Minnesota Academy of Ophthalmology and Otolaryngology for 1962-1963.

* * *

American physicians have contributed more than $4,700,000 to the nation's medical schools during 1961, the AMA recently reported.

* * *

Dr. P. G. Hench of the Mayo Clinic was appointed one of the 13 medical scientists to the Commission on Drug Safety which will be holding its first meeting soon in either Chicago or Washington, D. C. Dr. Hench in 1950 was awarded the Nobel prize in physiology and medicine for his work with hormonal drugs on arthritis and rheumatism.

* * *

Dr. David W. Florence of Tucson, Arizona has joined the orthopedic staff of the St. Louis Park Medical Center. **Dr. Lawrence H. Ringhofer** has joined the Seifert Clinic in New Ulm, and **Dr. S. W. Watson** of Royalton has become affiliated with **Drs. D. L. Johnson, A. H. Benson, R. A. Stoy** and **J. K. Heid** at the Medical Center in Little Falls.

* * *

Dr. Charles Vanderslus has left Minneota to begin a practice in Heron Lake.

* * *

The following physicians have relocated in other parts of the state: **Dr. T. P. Henderson** will join **Drs. A. H. Borgerson, A. Erickson** and **M. E. Mosby** on the staff of the Long Prairie Clinic—**Dr. William A. McCaul, Jr.** will join the East Range Clinic in Virginia—**Dr. R. Lawrence Thienes** has returned to St. Cloud to begin a practice in internal medicine—**Dr. David W. McQuoid** has joined **Dr. Richard G. Rowe** in Littlefork—**Dr. Adrian Kapsner** of Princeton will begin his medical practice at the Hutchinson Medical Center.—**Dr. Robert Fletcher** of Saskatchewan, Canada has joined the staff of the Adams Clinic in Chisholm—**Dr. D. W. Cunningham** joined **Dr. Robert D. Corteau** in Onamia—**Dr. Marcus A. Keil** has become associated with the Albert Lea Medical and Surgical Center—**Dr. Joseph P. Mlinar** has joined **Dr. J. A. Nesse** in the practice of medicine in Austin—**Dr. Lowell Barr** has joined the Albert Lea Medical and Surgical Center.

* * *

Dr. Dennis Lofstrom has returned to Pine River from Tanganyika where he spent the past four years as a medical missionary.

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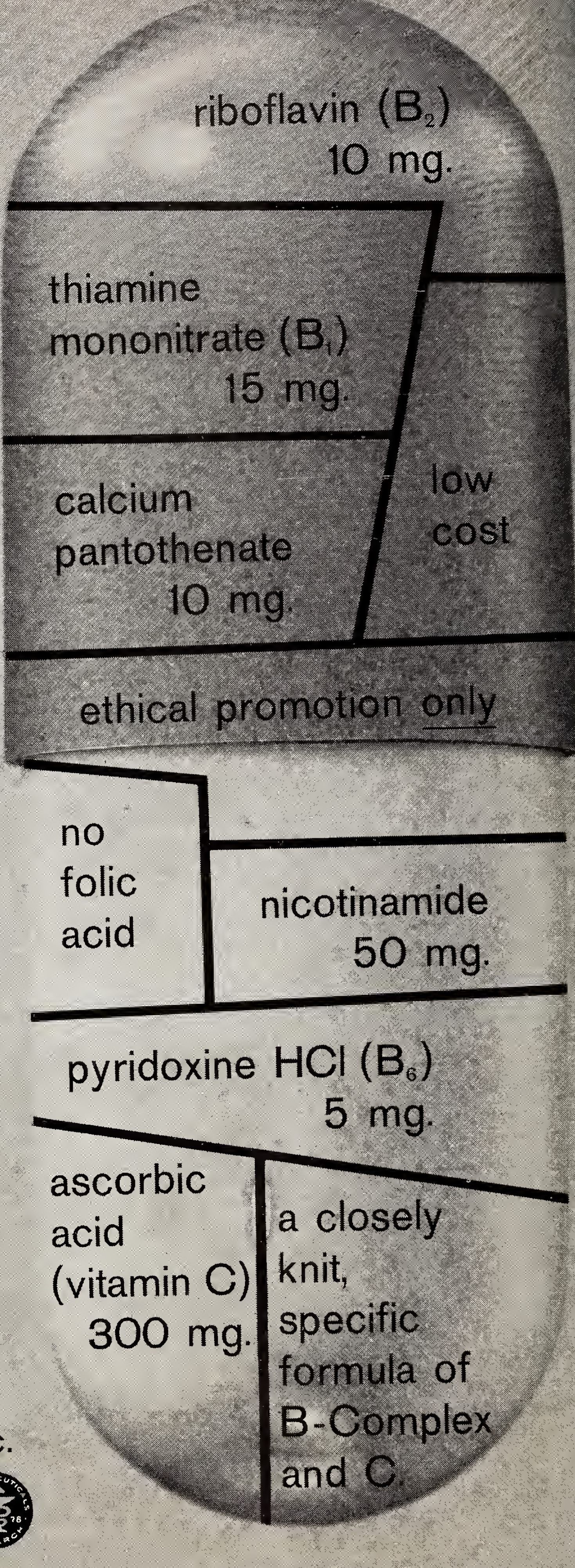

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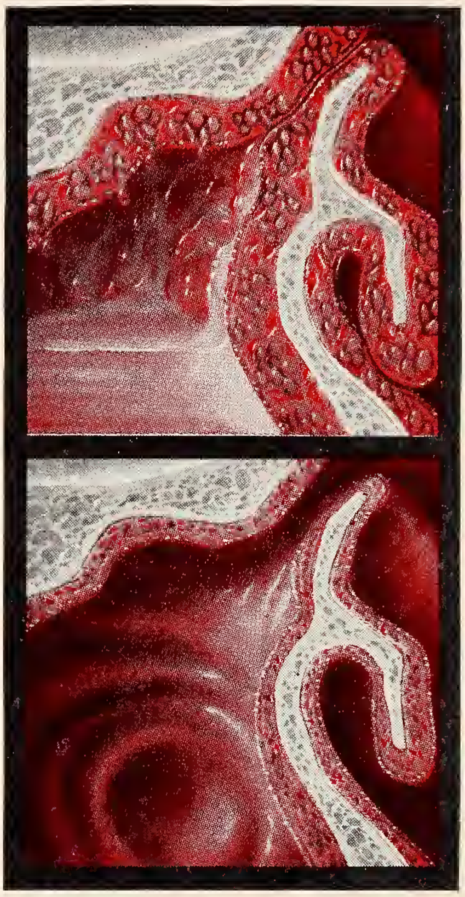

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Illustrations (photographs, tables, and graphs) should be submitted on separate sheets of paper and not combined in the text. Instructions for combining photographs are acceptable.

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President's Letter

In his oath Hippocrates considered a physician's responsibility to teach others the discipline of medicine ". . . to teach them this art, if they want to learn it, without fee or indenture; to impart precept, oral instruction, and all other instruction to my own sons, to the sons of my teacher, and to indentured pupils who have taken the physician's oath . . ."

At no time in the ensuing twenty-five hundred years has the fraternity of physicians approached more closely this ideal, expressed so ably so long ago, than it does today. Events of recent months have implemented our efforts to assure an adequate number of well-qualified students who will become well-trained physicians. Consider for a moment what is being done.

In March of this year the American Medical Association (A.M.A.) launched its student-loan program. This unique plan enables the needy medical student, intern, or resident to secure the financial assistance he may urgently require. He may receive this assistance through a bank at reasonable interest rates. Repayment of this loan with its interest is guaranteed by the A.M.A. Contributions to the fund when thus used are stretched to provide twelve times the amount in student credit. In the few months since its inception the student loan fund has already assisted 3600 medical students, interns, and residents. Loans have totaled $6,500,000 and will shortly exceed $8,000,000. More than 100 applications for assistance are being reviewed weekly. The median size of the loan principal is $1125 for medical students, and $1325 for graduate students. In Minnesota 26 loans to medical students and 37 loans to graduate students totaling over $70,000 have already been processed. Nationally, students in 81 medical schools, and interns and residents in 320 hospitals have received loans.

Many state medical associations and other organizations have promoted medical careers among young and able students who otherwise because of straitened circumstances might be forced to abandon their study. Minnesotans may be justly proud of the helping hand extended our students. Each year for several years one 4-year scholarship has been added to our rural scholarship program by the state association. We have made available both short and long-term loans to prevent students from abandoning their study or delaying their medical careers. These acts reflect clearly the sincere interest and genuine best wishes of Minnesota physicians toward those interested in a medical career. These acts also point out again organized medicine's desire to provide an adequate number of medical personnel to serve our expanding population.

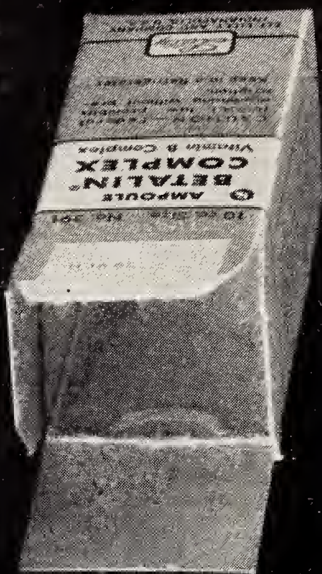
Other Minnesota organizations including the Minnesota Medical Foundation and the Southern Minnesota Medical Association have made major contributions in student loans and scholarships. The heartwarming generosity of those supporting these organizations and projects cannot be adequately acknowledged.

These humanitarian projects reflect the true spirit of the physician as he plans for greater medical service in the future and are genuinely appreciated by thousands of recipients whose careers are thus assured. Twenty five hundred years later the torch of Hippocrates still burns brightly.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association



the case of the missing ampoule

People aren't perfect—neither are machines. Both can slip up occasionally. Take an ampoule in a paper carton for example. How can we be absolutely sure that the ampoule is really inside? ■ Here's how: A machine folds the carton, inserts the ampoule, seals the carton, and then places it on the finishing line. Further down the line, the detective waits—a jet of air sweeping across the finishing line just strong enough to blow an empty carton off the belt. Properly filled cartons proceed for further inspection and packaging. ■ Perhaps a small point, but it is another in a long series of control measures designed to deliver quality pharmaceuticals every time.

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ULCERATIVE COLITIS and Pregnancy

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Flint, Michigan

Medical therapy for ulcerative colitis complicating pregnancy usually permits the pregnancy to carry successfully to term. Tubal ligation for prevention of subsequent pregnancies does not beneficially influence the ulcerative colitis. Surgical therapy, when needed, should control the colonic disease with colectomy and terminal ileostomy.

It is evident that female ulcerative colitis patients become pregnant as often as other women and therefore it is important that the effects of pregnancy be better understood, so that immediate and definitive treatment may be administered.

In 1931 Barnes and Hayes reported three fatal cases of ulcerative colitis during pregnancy. Since then many cases of ulcerative colitis and pregnancy have been reported, as pointed out in Table I. Reviewing these studies, one notes that ulcerative colitis has little effect upon pregnancy, but that pregnancy or the emotional attitude toward it may influence ulcerative colitis.

The described effect of pregnancy on the normal gastrointestinal tract is one of hyperirritability during the early months, followed later by constipation due to atony of smooth muscle and pressure from enlargement of the uterus. It is usually impossible to predict what effect pregnancy will have on ulcerative colitis in an individual patient. Some patients have an exacerbation of symptoms during the first trimester, improvement during the rest of the gestation, and aggravation of symptoms again after delivery. This response appears to be an exaggeration of the normal responses of pregnancy on the gastrointestinal

TABLE I

AUTHOR	YEAR	TOTAL GESTATIONS
Barnes and Hayes	1931	3
Saegesser	1936	2
Feder	1938	5
Buzzard	1938	6
Bargen, Nunez, Mussey	1939	17
Kersner, Palmer, Maimon and Ricketts	1948	16
Felsen and Walarsky	1948	42
Tumen and Cohn	1950	6
Sloan, Bargen, and Gage	1950	31
Abramson, Jankelson, Milner	1951	42
Kleckner, Bargen, Banner	1951	19
Kapel	1951	39
Kallet	1951	23
Patterson, Marcel, Eytinge	1952	18
Macdougal	1956	100

tract. Unfortunately, this pattern is not characteristic or consistent for most patients with ulcerative colitis during pregnancy. Since the disease is one of unknown etiology with an extremely variable course, there probably are many factors contributing to the etiology and pattern during pregnancy. No doubt, psychological preparedness and attitudes toward pregnancy play a significant role in the course of the disease.

Material and Method

The hospital records of St. Luke's Hospital, Duluth, Minn., from 1951 to 1960 inclusive were screened for all charts of female patients with proved ulcerative colitis. Proved ulcerative colitis was defined as having a history and physical examinination compatable with ulcerative colitis with the diagnosis confirmed by proctoscopic examination and barium enema after ruling out all other causes. The charts of these patients were reviewed for pregnancies during this period. Ten patients with twenty one gestations were found to suffer from proved ulcerative colitis; they are listed from A to J in the following tables. Two cases are here reported which illustrate the typical course of ulcerative colitis in these patients during their pregnancies.

Case Report

Case B This 28-year-old white female was admitted to St. Luke's Hospital for the first time in 1955. She was at term and had complained of severe constipation throughout her pregnancy. She had a prolonged first stage of labor and the fetus failed to descend due to a pathological retraction ring. A Cesarean section was done and a normal female infant was delivered.

Her second admission was in 1958 when at 3½ months duration she developed severe bloody diarrhea. She was hospitalized and proctoscopic examination confirmed the diagnosis of ulcerative colitis. She was put on a medical regimen of bed rest, high-calorie, low residue diet, and sulfadiazine and azulfedine. She responded well and was sent home after two weeks of medical management. At seven months gestation she again had an acute exacerbation with severe bloody diarrhea. Again she was hospitalized and was managed medically. She responded well and was discharged, At term another Cesarean section was done, and a normal infant was delivered. No exacerbations of her ulcerative colitis were noted during the puerperium.

During the next two years several mild exacerbations were noted, requiring hospitalization.

In 1960, she again became pregnant and had several mild exacerbations of increased mucus, cramping abdominal pain and diarrhea which was controlled medically without hospitalization. No blood was passed during these exacerbations. She delivered in January, 1961, again by Cesarean section a normal infant. A partial bilateral salpingectomy was done at this time, the indication being that her ulcerative colitis became worse with each pregnancy.

A follow-up interviewing the patient's obstetrician and internist revealed the continuation of mild exacerbations of ulcerative colitis, but no bleeding from the rectum. The patient is rechecked biannually by proctoscopic examination which has revealed chronic mucosal changes, but no malignancy or acute bleeding.

Case Report

Case H This 28-year-old white female was admitted to St. Luke's Hospital at term with a six-year history of ulcerative colitis in May, 1948. A normal infant was delivered by breech extraction. No exacerbation of ulcerative colitis was recorded in ante partum or post partum.

She again delivered spontaneously in November, 1952, without complications. She continued to have mild exacerbations of her ulcerative colitis between pregnancies.

Follow-up of the patient revealed continued exacerbations of severe bloody diarrhea. A total colectomy with ileostomy was done in 1958. The patient has been fine since, except for a brief hospitalization at Moose Lake Hospital for mental depression. She has not become pregnant since her total colectomy and ileostomy.

Comments

Table II represents a comparison of the number of pregnancies before and after the onset of proved ulcerative colitis. The number of live births, abortions, and stillbirths are also reported. No therapeutic abortions were recorded in this series. Before the onset of ulcerative colitis, there were fifteen gestations with thirteen live births or 86.7% live births. The abortion rate in these fifteen gestations was 13.3%. No stillbirths were reported. After the onset of ulcer-

TABLE II

	PREGNANCIES BEFORE ULCERATIVE COLITIS				PREGNANCIES AFTER ULCERATIVE COLITIS				
Case	Total Preg.	Live Births	Abortions	Still Births	Total Preg.	Live Births	Abortions	Still-Births	Ectopic
A	3	2	1	0	1	0	0	0	1
B	1	1	0	0	2	2	0	0	0
C	0	0	0	0	2	2	0	0	0
D	3	3	0	0	1	1	0	0	0
E	0	0	0	0	3	3	0	0	0
F	3	3	0	0	2	1	0	1	0
*G	3	3	0	0	0	0	0	0	0
H	0	0	0	0	2	2	0	0	0
I	0	0	0	0	3	1	2	0	0
J	2	1	1	0	3	1	1	1	0
TOTALS	15	13	2	0	19	13	3	2	1

*Ulcerative colitis developed in the post-partum period of her third pregnancy.

ative colitis, thirteen live births were reported out of nineteen gestations, which represents a percentage of 68.4 live births. The abortion rate is 15.8% and the stillbirth rate is 10.5%. Disregarding the ectopic pregnancy, the corrected percentages are: live births, 72.2%; abortions, 16.6%; and stillbirths, 11.1%.

It should be noted in this series, however, that the abortion rate after the onset of ulcerative colitis, is higher by only one more abortion than before the onset of ulcerative colitis. Also, the estimated abortion rate ranges in various reports from 10% to 40% in the United States. Therefore, I feel that the differences which are apparent in the abortion rate before and after the onset of ulcerative colitis are not significant.

Table III represents the nineteen gestations after the onset of ulcerative colitis and the two cases which developed in the post-partum periods. The one case developing in pregnancy and the two cases with their onset in the post-partum periods had severe initial episodes of ulcerative colitis, which is consistent with the experience found by other authors. The activity or quiescence of ulcerative colitis at the onset of the pregnancy seemed to play no important role in the course of the disease; also, no prediction of the course of the ulcerative colitis could be made in any one pregnancy, regardless of the activity of the colitis at the onset of gestation. This series revealed that a third of the patients improved, a third became worse, and a third reported no change in their symptoms. It appeared to make no difference whether the disease was active or inactive at the onset of pregnancy; but the number of cases with active colitis was small and the finding may not be significant. A lower morbidity is usually reported if the ulcerative colitis is inactive at the onset of pregnancy.

TABLE III

EFFECT OF 21 PREGNANCIES ON 10 PATIENTS WITH ULCERATIVE COLITIS

Onset during pregnancy			1
Onset during puerperium			2
Active disease when pregnancy began			3
Worsened	1	33 ⅓ %	
Improved	1	33 ⅓ %	
No change	1	33 ⅓ %	
*Inactive disease when pregnancy began			15
Worsened	5	33 ⅓ %	
Improved	5	33 ⅓ %	
No change	5	33 ⅓ %	
TOTAL PREGNANCIES			21

*Figures contain an exacerbation which occurred late in pregnancy after the onset of the disease early in the first trimester of the same pregnancy.

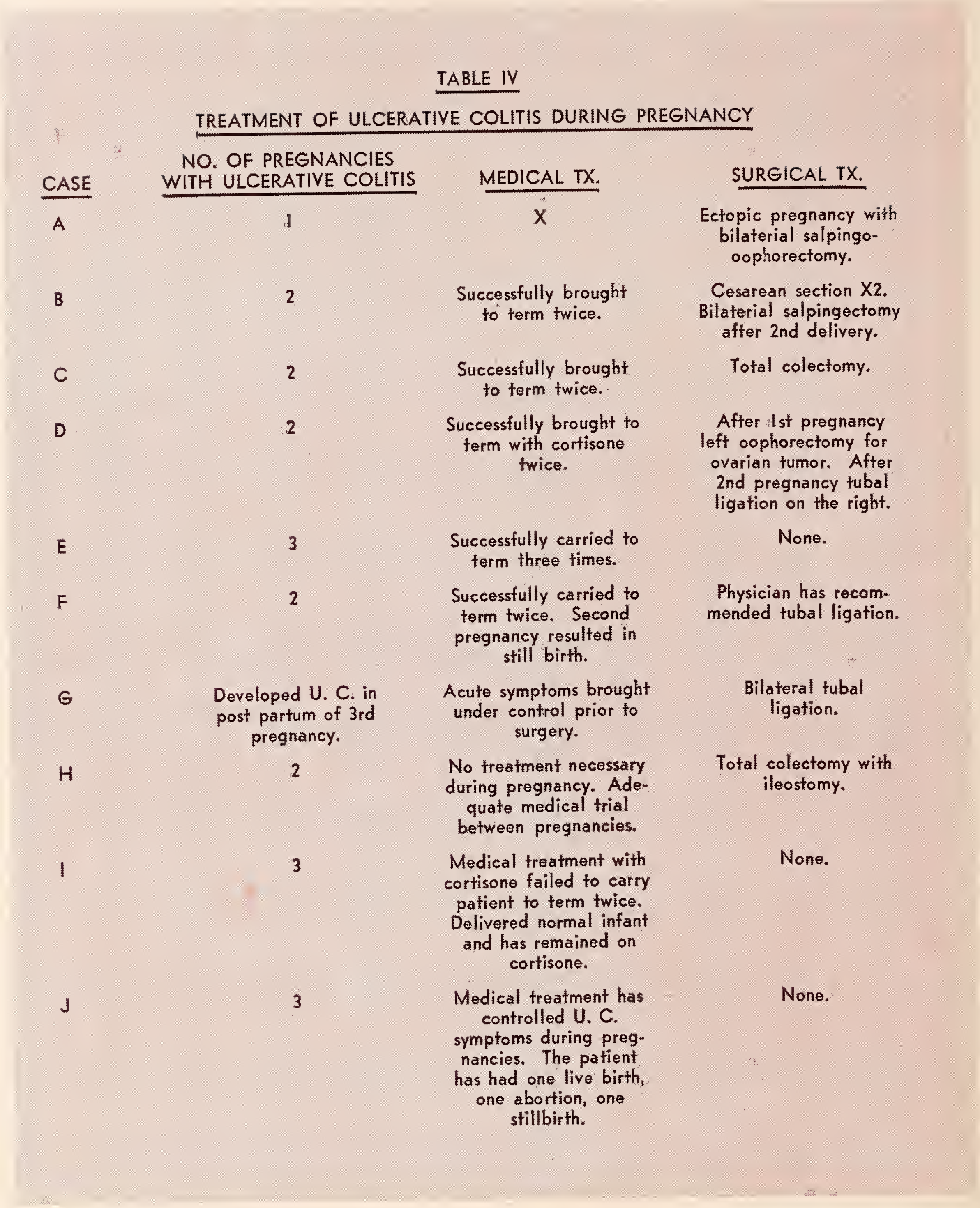

TABLE IV

TREATMENT OF ULCERATIVE COLITIS DURING PREGNANCY

CASE	NO. OF PREGNANCIES WITH ULCERATIVE COLITIS	MEDICAL TX.	SURGICAL TX.
A	1	X	Ectopic pregnancy with bilaterial salpingo-oophorectomy.
B	2	Successfully brought to term twice.	Cesarean section X2. Bilaterial salpingectomy after 2nd delivery.
C	2	Successfully brought to term twice.	Total colectomy.
D	2	Successfully brought to term with cortisone twice.	After 1st pregnancy left oophorectomy for ovarian tumor. After 2nd pregnancy tubal ligation on the right.
E	3	Successfully carried to term three times.	None.
F	2	Successfully carried to term twice. Second pregnancy resulted in still birth.	Physician has recommended tubal ligation.
G	Developed U. C. in post partum of 3rd pregnancy.	Acute symptoms brought under control prior to surgery.	Bilateral tubal ligation.
H	2	No treatment necessary during pregnancy. Adequate medical trial between pregnancies.	Total colectomy with ileostomy.
I	3	Medical treatment with cortisone failed to carry patient to term twice. Delivered normal infant and has remained on cortisone.	None.
J	3	Medical treatment has controlled U. C. symptoms during pregnancies. The patient has had one live birth, one abortion, one stillbirth.	None.

Table IV represents a summary of the approach to treatment used to control the ulcerative colitis during pregnancy. An adequate medical treatment program should be tried first. Proper rest and low-residue, high-calorie diet are mandatory. Parenteral fluids and blood for correction of electrolite problems and anemia are usually necessary. Positive nitrogen balance is the ultimate goal of the above therapy. Drug therapy consists of antibiotics, iron and antidiarrheal medications and sedation. The use of ACTH and cortisone is an excellent temporary measure for relieving acute symptoms and for gaining time for more definitive treatment. If these measures fail, then surgery should be considered.

In handling the individual patient no definite rules can be set down as to when and what kind of surgery should be considered. In 1951, Abramson[1] and his associates suggested the following treatment plan:

1. During the first trimester of pregnancy, if medical treatment fails, therapeutic abortion should be advised.

2. In the second and third trimesters every attempt should be made to continue the pregnancy. If the ulcerative colitis is life-endangering, then therapeutic abortion should be advised.

At this time no series had been compiled with reference to total colectomy with ileostomy. Abramson mentioned that an ileostomy was done during pregnancy on one patient, resulting in the mortality of both mother and fetus. A more modern approach might be temporary ileostomy followed by total colectomy after delivery.

In 1957, Soudamore[18] and associates reported a series of twelve women with eighteen pregnancies, who previously had ileostomies or total colectomies with ileostomies. He reports thirteen births (72%), four abortions (22%), and one stillbirth (6%). All of these patients delivered vaginally. Soudamore concluded that it was relatively safe for a patient with an ileac stoma to undergo pregnancy approximately one year after surgery, but that careful management was imperative because of the possible complications related to the stoma, residual colitis, or the scarred perineum.

Table V summarizes the surgical approach used as definitive treatment in six of the ten patients. Only two patients underwent colectomy and ileostomy, but not while pregnant. One died of carcinoma of the colon which was found at the time of surgery; the other patient has not become pregnant since her colectomy. Four patients were treated with surgery directed toward the prevention of pregnancy with bilateral salpingo-oophorectomy, bilateral salpingectomy, or bilateral tubal ligation. One died of anaplastic carcinoma of the colon, and the other three have continued to have exacerbations of their ulcerative colitis.

Summary

Although the series is small, I feel that some suggestions of value can be made. One must always keep in mind that the basic disease process is the ulcerative colitis and that the pregnancy is incidental. Medical treatment was adequate to carry all nineteen gestations to term in this series. Surgery represented definitive treatment in all cases reported. Where surgery was done to prevent future pregnancies, exacerbations of ulcerative colitis continued, suggesting that tubal ligation failed to control the basic disease process. Ileostomy with subsequent colectomy represents a more logical approach to definitive treatment. If the colitis becomes life-endangering during a pregnancy, and if medical treatment fails to control the symptoms, then more radical procedures are warranted. If the symptoms are severe enough to justify definitive surgical treatment, the surgery should be directed at the gastrointestinal tract, not the reproductive system.

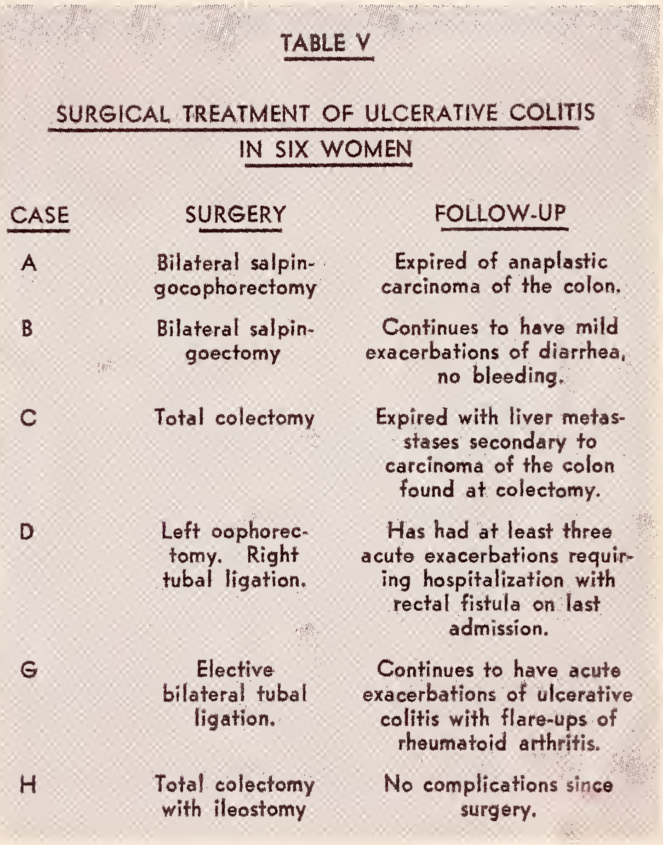

TABLE V

SURGICAL TREATMENT OF ULCERATIVE COLITIS IN SIX WOMEN

CASE	SURGERY	FOLLOW-UP
A	Bilateral salpingoophorectomy	Expired of anaplastic carcinoma of the colon.
B	Bilateral salpingoectomy	Continues to have mild exacerbations of diarrhea, no bleeding.
C	Total colectomy	Expired with liver metasstases secondary to carcinoma of the colon found at colectomy.
D	Left oophorectomy. Right tubal ligation.	Has had at least three acute exacerbations requiring hospitalization with rectal fistula on last admission.
G	Elective bilateral tubal ligation.	Continues to have acute exacerbations of ulcerative colitis with flare-ups of rheumatoid arthritis.
H	Total colectomy with ileostomy	No complications since surgery.

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Repentance is nothing but a glad returning to the right way, after the grief of being out of the way.—Thomas Hobbes

WHAT'S YOUR DIAGNOSIS?

This 18-year-old boy was admitted to the hospital complaining of malaise, fever, chills, nausea, and vomiting. He gave a history of multiple operations, none of which seemed to have any relationship to his current illness. The heterophil agglutination test was positive with a titer of 1:3584. The blood picture revealed a typical diagnosis of infectious mononucleosis. At the time of admission his spleen was found to be palpably enlarged and tender.

Shortly after his admission to the hospital he became more acutely ill than previously. Following a coughing episode he experienced pain in the left side of the abdomen, shoulder strap pain, weakness, and prostration. He was pale and shockey but his blood pressure was not at shock level. He was placed on steroid medication because of the apparent toxicity of his illness, and within the next 48 hours he was markedly improved.

His hemoglobin on admission was 15.6 grams. Two days later it was 13.4 grams. In the next 48 hours his hemoglobin dropped progressively to 12.6, 12.4, 11.5, and finally to 10.0 grams. The spleen was not palpable and it was not tender.

What's Your Diagnosis? Turn to page 1112.

Man was made at the end of the week's work when God was tired.—Mark Twain

Abdominal Manifestations of ENDOMETRIOSIS

Involvement of any abdominal organs and organ systems with endometriosis creates multiple difficult problems for the clinician. The author presents an excellent review of this problem based on extensive experience in this field.

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In a discussion of the abdominal symptoms of endometriosis, we are concerned with the diagnosis of endometriosis and the organ or organs involved. Briefly, endometriosis refers to the occurrence of endometrial glands and stroma in a location other than the uterine cavity. The affected areas may or may not give rise to symptoms; this depends on the extent and location of the lesion. Endometriosis is almost invariably seen during the reproductive years and often afflicts women who have a history of relative or complete infertility. This is a very common condition if we include all the small areas of endometriosis seen at laparotomy and as an incidental finding on surgical specimens; however, even when the lesions are troublesome enough to require laparotomy, the diagnosis is made preoperatively in only a small percentage of cases. Fallon[1] illustrated this in a report of 200 cases of endometriosis in which the correct diagnosis was made in only six patients preoperatively, although there were sufficient signs and symptoms to suggest the diagnosis in more than 66 per cent of the patients.

The symptomatology of endometriosis may be subdivided on the basis of location—pelvic endometriosis, endometriosis of the intestinal tract, and endometriosis in more unusal locations, such as bladder, umbilicus, and abdominal scars.

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[*] Read at the meeting of the Minnesota Surgical Society, Rochester, Minnesota, May 4, 1962.

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Endometriosis in Aberrant Locations

The unusual locations are quite the easiest from the standpoint of preoperative diagnosis. A tender, often bluish nodule in an abdominal scar, in the umbilical area, or even in the groin in a premenopausal woman is the ordinary finding, while the history may reveal that the mass has been present for months or years and that there is an exacerbation of pain and tenderness with the menses. Such nodules are generally 1½ to 3 cm. in diameter and are relatively circumscribed. Excision, which is the indicated treatment both for pathologic diagnosis and for cure, is not difficult, although the dissection often proves to be more extensive than seemed necessary at first glance.

Endometriosis of the bladder rarely penetrates the wall to the bladder mucosa but when it does the diagnosis becomes easier. The discomfort and pain are suprapubic and are aggravated by changes in the volume of urine in the bladder; relief is often obtained by micturition. The symptoms are generally of rather long duration, and, again, the exacerbation of the pain at the time of the menses and the presence of blood in the urine at that time suggest the diagnosis. This can be confirmed by cystoscopic examination and biopsy or by multiple repeated biopsies if the first shows only inflammation. The preferred treatment is complete surgical excision of the lesions. Counseller[2] recommended that this be done at the time of the menses, when the lesion will be distended with blood and its extent more readily determinable.

Pelvic Endometriosis

Pelvic endometriosis frequently causes abdominal pain. The pain is in the lower abdominal or suprapubic area, but it is not localized and is often described as a sense of pressure throughout the deep abdominal region and extending through or radiating to the vaginal tract. The pain builds up premenstrually and, in the early lesions, is relieved after the menses. Later in the course of the disease the pains may be present throughout the month. Severe menstrual cramping may accompany such discomfort or the entire clinical picture may be exacerbated during the first day before and the first or second day of the menses. The additional points that are suggestive of endometriosis are the age, the premenopausal status, a relative infertility, and the gradual increase in the pains in recent months. Because of the frequent obliteration of the cul-de-sac and the fixation of tissues in the pelvis, dyspareunia is common and may result in persistent lower abdominal aching for 12 to 24 hours after intercourse. On physical examination one can often identify nodules at the posterior peritoneal reflexion, shortening and fixation of one or both uterosacral ligaments, and perhaps an adherent, enlarged ovary. A change in the menses is commonly noted; menorrhagia or metrorrhagia, or both, may be present and are additionally suggestive of the diagnosis of endometriosis or adenomyosis.

An uncommon source of pelvic symptoms is the uterine adenomyoma with cystic degeneration or hemorrhage into the cyst cavity. Such tumors cause a considerable increase in dysmenorrhea, with acute lower abdominal pain and tenderness localized to the uterine lesion. Occasionally they are large enough so that the presenting complaint is a tender mass in the lower part of the abdomen.

Treatment of pelvic endometriosis is a subject unto itself and requires careful judgment on the part of the surgeon. Conservative surgery with preservation of ovarian tissue should always be considered in the younger patients, even if multiple areas of endometriosis must be excised, endometriomas resected, and a presacral neurectomy done for relief of pain. There is a reasonable (12 to 40 per cent) chance of a subsequent pregnancy with conservative surgery, although it is true that many of these patients will eventually require another operation because of endometriosis.

Involvement of the Gastrointestinal Tract

Endometriosis of the gastrointestinal tract is not uncommon, although sufficient involvement to cause partial or complete obstruction is certainly unusual. Symptoms from such locations depend almost entirely on whether or not partial obstruction exists; even when the sigmoid and rectosigmoid are adherent to the cervix and uterus, and when a rather advanced degree of disease is present in the wall of the bowel, bowel symptoms occur in less than 25 per cent of cases. When symptoms are present, they often take the form of lower abdominal cramps associated with, and increased in intensity during, the menses, and the cramps are often brought on by defecation. Occasionally these patients do have localized abdominal pain, but, again, a carefully-taken history will reveal the association with the menses, and any additional factors pointing to the diagnosis of pelvic endometriosis are suggestive of endometriosis of the bowel.

If the lesion, although localized, surrounds the bowel or markedly constricts the lumen, the symptomatology changes to a picture of intermittent obstruction. There may be obturation, mild to severe cramping, borborygmi, and even abdominal distention and vomiting, but these findings are nonspecific, and the diagnosis of obstruction due to endometriosis depends on the relationship of bouts of obstruction to the menstrual cycle, acquired dysmenorrhea, a modularity of the cul-de-sac or uterosacral ligaments, and related factors. Proctoscopic examination and roentgenography of the colon may be diagnostic or at least helpful. Most endometrial lesions of the colon involve the rectosigmoid and lower sigmoid. Significantly, although the bowel may be fixed or angulated, the impression is that of a lesion involving the bowel from without rather than of a lesion starting in the mucosa. From the radiologist's viewpoint, it is significant that the mucosal folds are intact, the lesion is rather sharply demarcated, and the mass is tender to palpation. The area of constriction tends to be eccentric and more pronounced on one side than on the other. If the lesion is not obstructing, a rather localized spasm may be present above and below the lesion, as opposed to the rather diffuse spasm of diverticulitis, in which condition, moreover, the diverticulae are usually easily demonstrated. In a series of 17 cases of intestinal endometriosis reported by McGuff,[3] the diagnosis was suggested preoperatively in seven.

When the lesions are producing obstruction, resection of the bowel is generally necessary, and usually extirpation of the ovaries is required as well. In younger patients desirous of further childbearing, resection of a localized segment of bowel is feasible, provided that the ovaries seem free of the disease and the pelvic involvement with endometriosis is not such as to preclude a pregnancy. Fortunately, these lesions of the bowel do tend to be localized and are often amenable to surgical excision. When the patient is 35 to 40 years of age or older, and when the lesion involves only about 50 per cent of the circumference of the bowel, ablation of the ovaries will be sufficient to arrest the endometrial lesions; the bowel will re-expand and resection will not be necessary.

An interesting paper on endometriosis of the bowel was that by Lane[4] on endometriosis of the appendix. He reported 30 cases, in 11 of which the symptoms of right lower quadrant pain, nausea, vomiting, and tenderness suggested appendicitis, and the operation was done as an emergency procedure; in none was a preoperative diagnosis of appendiceal endometriosis suggested. In only two of these 11 was there even any pathologic evidence of inflammation. Thus, although endometriosis may mimic a chronic or acute attack of appendicitis, it seemingly does not predispose the appendix to inflammation. The remaining 19 cases were found incidentally during other surgical procedures; the lesions in these cases were not causing symptoms, and the appendectomy was done prophylactically.

Leaking or Ruptured Endometrioma

One of the most interesting endometrial conditions encountered by the general surgeon is that of the large leaking or rupturing endometrioma. Endometriomas cause few or no symptoms per se; they may become 6 or 8 or 12 cm. in size, yet if they expand into the abdomen they remain relatively symptomless. Any symptoms would be those of pelvic endometriosis and not specifically of the endometrioma. In addition, since endometriomas are adherent to surrounding tissues, they rarely develop a pedicle that can become twisted and give pain. This type of cyst, however, is thin-walled, and leaking of its contents is relatively common. On occasion, frank, sudden rupture may occur, with the spillage of a large amount of old blood and cellular debris onto the peritoneal surfaces. The resulting irritation is acute, and the symptoms are severe enough to simulate the picture of a ruptured ectopic pregnancy, twisted ovarian cyst, or ruptured follicle. If the symptoms are localized to the right side, it may be difficult to exclude acute appendicitis.

In a small group of cases reported previously,[5] the average age was 30 years. This is considerably lower than the average age in most series of cases of endometriosis requiring surgery, and the fertility was also very low, only two of 10 patients having been pregnant. The preoperative diagnosis was made or suggested in four of these 10 patients.

These patients did, however, present a definite clinical picture. The onset, as in the onset of a ruptured ectopic pregnancy, was acute and definite, and the symptoms were severe enough to cause the patients to seek help within a period of hours. The pain began in the lower part of the abdomen in all cases, was continuous and steady, but was not as well localized as it is in appendicitis. Also, although these patients were seen on an emergency basis, they were not in shock, and the admission notes frequently stated, "Acutely ill but in good physical condition." The past history was helpful only in suggesting the possibility of endometriosis through a story of progressive or acquired dysmenorrhea, dyspareunia, and related factors, and through a normal menstrual history, which made ectopic pregnancy unlikely.

Even on physical examination the localization is poor unless a partially emptied cyst remains that can be palpated. The true localization so characteristic of appendicitis or twisted cysts is absent, as is the acute pain on motion of the cervix that occurs with ruptured ectopic pregnancy. If the symptoms are maximal in the right lower quadrant of the abdomen, the condition will probably be diagnosed as acute appendicitis. The leukocyte count is usually elevated, but there is no evidence of acute blood loss; the temperature is generally normal. Rectovaginal examination in the patient with a twisted cyst will result in identification of that condition in 90 per cent of the cases. With a ruptured cyst, vague thickening, perhaps nodules in the cul-de-sac, or shortened uterosacral ligaments will be the customary findings.

Treatment consists of abdominal exploration through an adequate incision. The presence of small to large amounts of a chocolate-colored, mucoid fluid is characteristic of a ruptured endometrioma. In younger patients, especially those with only one child or with no children, conservative surgery is indicated. The cyst can be shelled out of the ovary, or the ovary may be partially resected. Even if removal of one tube and ovary is necessary, the remaining tube and ovary and the uterus can be salvaged, and pregnancy is then at least a possibility. The free chocolate-colored fluid should be removed by irrigation with saline, but since it is composed essentially of cellular debris rather than living cells, there is little fear of implantation of cells. In one patient with an endometrioma eight inches in diameter that had ruptured and necessitated excision of the ovary, there was no sign of endometriosis nine years later when a hysterectomy was done for large fibroids.

In older patients—35 to 40 years of age or older—or in those with severe dysmenorrhea, total abdominal hysterectomy plus bilateral salpingo-oophorectomy is indicated to control the symptoms of endometriosis.

Summary

The abdominal symptoms of endometriosis can be classified as arising from pelvic endometriosis, endometriosis of the gastrointestinal tract, and endometriosis in aberrant locations; in addition, there are the acute symptoms of a ruptured endometrioma.

Endometriosis in aberrant locations such as bladder, umbilicus, or scar is generally easy to diagnose and is cured by local excision.

In pelvic endometriosis, the characteristic picture is that of pressure-like lower abdominal pain, closely linked to the menses, occurring in premenopausal women who may have associated dyspareunia and a change in the menses. Surgical treatment should be conservative, with excision of the lesions and with preservation of ovarian tissue in younger patients.

Endometriosis of the gastrointestinal tract gives few symptoms until partial obstruction is present, and then the symptoms are those of a partial obstruction with exacerbations at the time of the menses. These conditions often require resection of the bowel.

Ruptured endometriomas cause signs of acute peritoneal irritation and require exploration with conservative treatment and preservation of ovarian tissues in the younger patients; hysterectomy with bilateral salpingo-oophorectomy is indicated in older patients or those with severe dysmenorrhea.

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ELPENOR SYNDROME

(Postalcoholic behavior syndrome)

Elpenor, not very valiant in war or steadfast in mind, was the youngest companion of Odysseus (Ulysses). According to Homeric legend Odysseus sent a group of his warriors, including Elpenor, to the island of Aeaea to visit at the castle of Circe, goddess of speech and enchantress of men. When the warriors failed to return, Odysseus with the rest of his party went to check on them and found them all turned to swine under Circe's magic spell. Her sorcery, however, was impotent when tried on Odysseus and his companions, because through the magic herb moly that Hermes had given them for just such an occasion, they were rendered immune to her enchantment.

After compelling Circe to disenchant those of his men who had been turned into swine, and remaining himself impervious to her wiles, Odysseus continued to live at Circe's palace for a year, dissipating and carousing, drinking wine and making love. (Such is the delightful paradox of Greek legend.)

One night after the young and rash Elpenor had ingested an excessive amount of alcoholic beverage and fallen asleep on the roof where he had lain down to cool himself, he was later roused by the raucous activities of his companions below, leaped up, staggered to the edge of the roof, and toppled over, breaking his neck and awakening in Hades.

Not even missing him, his companions rowed away in their galley. Later his soul appeared to Odysseus and his army, begging that he be not abandoned so unceremoniously, unwept and unburied, lest such neglect be avenged on Odysseus by the gods.

The allegoric syndrome refers to the behavior of persons who ingest a somnolent amount of alcoholic beverage, sedative drugs, or both, and who awake in unfamiliar surroundings and commit acts which are abnormal, antisocial, or illegal. Such behavior may consist of walking through a window, of jumping clothed into a pool, of stealing, or even of committing murder. After regaining normal consciousness the individual may have only vague recollections of the events which transpired.

Elpenor syndrome has been here described to illustrate and to emphasize the possible medical and legal implications contingent on the ingestion of excessive amounts of alcoholic beverages, sedative drugs, tranquilizers, or a synergistic combination of two or more of these agents.

Many a live wire would be a dead one except for his connections.—Wilson Mizner

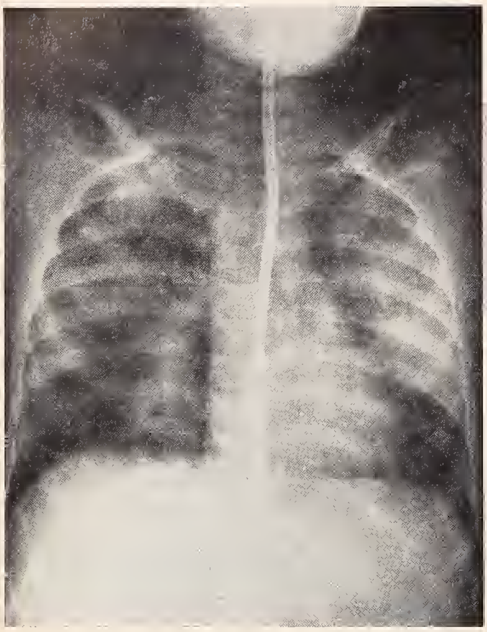

Figure 1.
This chest X ray reveals pneumothorax on the right side and bilateral lung contusions.

Injuries

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Hepatic trauma is increasing with the use of automobiles. The author emphasizes need for accurate and immediate diagnosis of the problem and surgical intervention when indicated. Controversial aspects of surgical management have been brought out. An informative article for all physicians who manage patients with trauma.

ALTHOUGH WOUNDS of the liver are not a common problem for which the surgeon is consulted, nevertheless they are occurring with increasing frequency. Bruns, in 1870, successfully resected a lacerated portion of liver caused by gunshot wound;[1] Burghart, in 1887, successfully packed a stab wound of the liver to control hemorrhage.[1] As reported in earlier series, the mortality from liver wounds, was from 60 to 80 per cent; in World War I it was 66.2 per cent. Despite improvements in anesthesia, blood transfusions, electrolyte administration, and the addition of

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*Department of Surgery St. Louis Park Medical Center

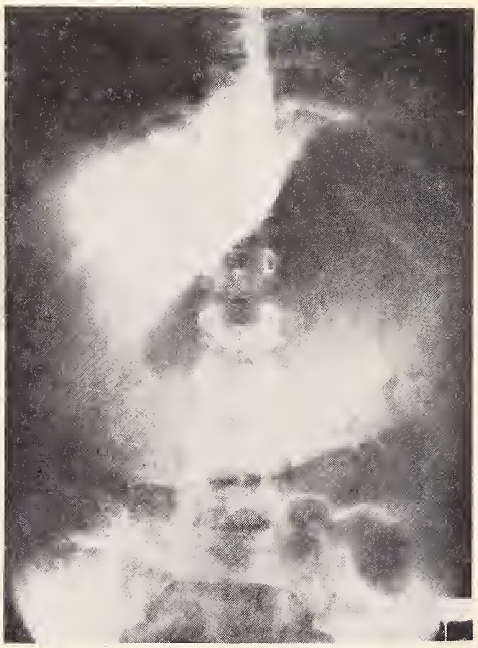
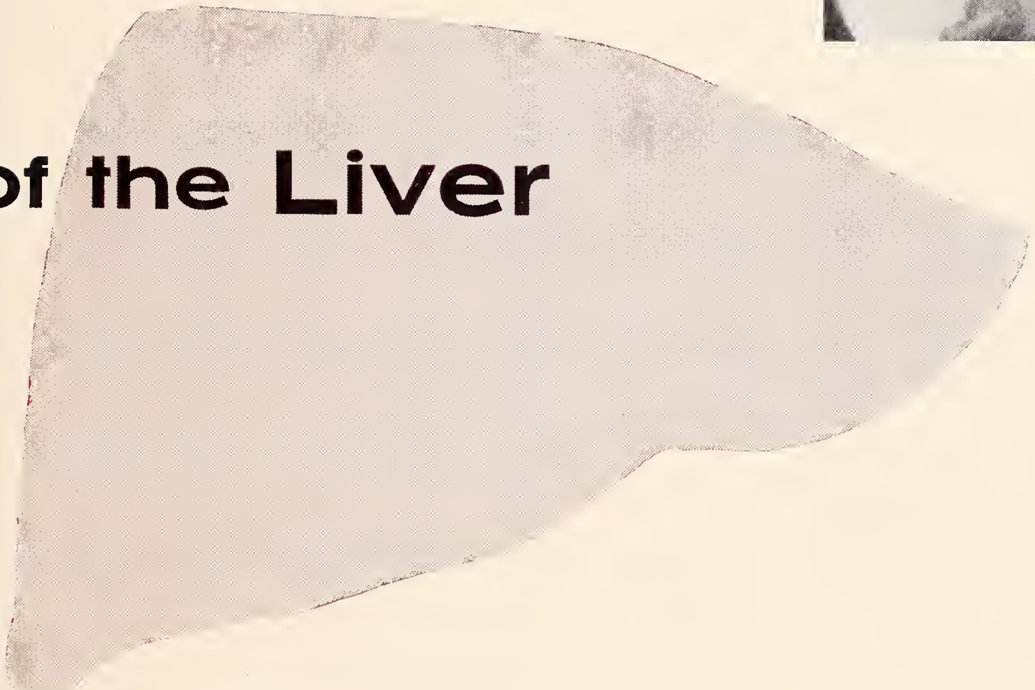


Figure 2.
This flat film of the abdomen shows a marked gastric distention, loss of the properitoneal fat line, and obliteration of the psoas shadows.



# of the Liver

antibiotics to the surgeon's armamentarium, the mortality associated with liver wounds remained at 40 percent in the early years of World War II; improvements in surgical techniques during the war then lowered the mortality to 20 per cent. The treatment of large numbers of hepatic injuries led to the discovery, by Madding, Frank, Fine, and other members of the Second Auxiliary Surgical Group, of the importance of providing adequate external drainage and of the dangers in use of the gauze pack for controlling hepatic hemorrhage. It was recognition of these two factors that resulted in the considerable improvement in mortality rates following wounds of the liver during World War II.[2]

Definition and Types of Injuries

Liver injuries are caused by many forms of trauma. For example, there are occasional liver injuries associated with toxemia of pregnancy with eclampsia. Recently there have been reports of liver injuries due to external cardiac massage. Occasional liver injuries occur in large babies during childbirth. Liver injury has occurred following examination for pyloric stenosis. Liver injuries may be divided into those caused by blunt trauma and those caused by penetrating wounds; as a group, the liver wounds produced by blunt trauma have a poorer prognosis.

Diagnosis

Diagnosis of injury to the liver should be made as soon as possible, since it has been established that early diagnosis leads to a lower mortality. Liver injuries should be suspected in all patients who have a history of trauma and who present with abdominal pain or tenderness and shock. In the unconscious patient, difficulty is encountered in eliciting these signs and symptoms; however, if palpation of the abdomen elicits more stirring of the patient than squeezing of the trapezius muscle, one must be suspicious of peritoneal irritation due to liver injury. As a general rule, in patients with a head injury, the presence of shock is indicative of injury to organs other than the brain until proved otherwise.[2] The most common complaint of patients who have liver injuries is abdominal pain, usually severe in nature and aggravated by deep breathing and motion. Tenderness on rectal examination may be helpful in making a diagnosis of free peritoneal blood.

Berman, in 1957, emphasized the important relationship between the white blood count and liver injuries.[3] He noted that if the white blood count was higher than 15,000, more than 90 per cent of patients with recent abdominal trauma had either a laccerated liver or spleen.

Treatment

The treatment of liver injuries should be aggressive. When there is reasonable doubt as to the diagnosis and the patient is not improving laparotomy should be performed. The patient should be given blood transfusions until brought out of shock and then be taken to the operating room as quickly as feasible.[4] Nonsurgical treatment has resulted in much higher mortality rates than has surgical treatment. In patients with liver injuries, one must not resort to autotransfusions of the free blood in the peritoneal cavity, as this blood is mixed with bile, is very toxic, and may result in the death of the patient. Either a subcostal or vertical incision may be used; in about 10 per cent of cases, however, the incision will have to be enlarged into the thorax.

About 80 to 90 per cent of patients will no longer be actively bleeding at the time of surgery. In Madding's large series (over 800 patients) only 9 per cent were found to be bleeding at the time of surgery.

Ligation

In the more severe cases one may have to temporarily cleanup the gastrophepatic ligament to control the hemorrhage during the time one is debriding the liver and ligating the larger bleeding vessels. The gastrohepatic ligament should not be clamped for more than 10 to 15 minutes, however. Right or left hepatectomy may be necessary because of extensive liver damage or uncontrollable hemorrhage. Ligation of the right or left hepatic artery should be done only when it is impossible to control the hemorrhage by any other method[5], this procedure being fraught with a high incidence of liver infarction.

Packing

There is general agreement among recent authors that gauze packs should not be used to control hepatic hemorrhage, as the pack acts as a dam, thus causing a pooling of liver secretions with subsequent infection and abscess formation. Furthermore, the removal of the pack at a later date may result in massive delayed hemorrhage and death. In Burford's series, complications related to the gauze pack occurred in 25 per cent of patients in whom packs were left to control hemorrhage.

There is presently some difference of opinion as to whether or not absorbable hemostatic agents such as gelfoam and oxycel should be used. Amerson and Blair recommend their use;[6] McAllister, Hicken, and Clark, who have done considerable research with the absorbable hemostatics, believe that they are contraindicated.[7] They found that liver wounds in dogs healed best when left alone, and those treated with hemostatic agents healed poorly when compared with control dogs in whom similar liver wounds were left completely alone and not even sutured. Some complications following the use of gelfoam and oxycel in humans have been reported.[1] Apparently these agents may act just like ordinary gauze, damming up the secretions of the liver and thereby producing a pocket of bile which becomes infected. It has been proven in the laboratory that these agents may retard the healing of liver wounds because of delayed absorption of the hemostatic material.[7] Debridement and removal of all necrotic liver is exceedingly important. Most authors recommend conservative debridement of liver wounds because of the difficulty in controlling the massive hemorrhage that occurs with radical debridement.

Drainage

Madding states that the most important reason for operating upon patients with wounds of the liver is to provide for external drainage of bile; he advises that exit wounds for drains should be at least 1½ inches in length. Fogelman and Sparkman state that drain wounds should be large enough to allow egress of necrotic fragments of liver tissue. Furthermore, the drains should be left in place for at least 12 days, and then removed only if all drainage has ceased. Most authors advise placing the drain deep within the laceration of the liver. In addition, in the more severe cases, the subphrenic space, the hepatorenal pouch, and the right (or left) gutter should be drained. Rarely is a liver wound too small to require drainage. In contrast to the generally accepted philosophy, Varco maintains that drainage of the common bile duct obviates the need to drain the abdominal cavity with Penrose drains;[3] he thinks that decompression of the extrabiliary tree decreases bile drainage and allows for rapid sealing to the liver surfaces. Research and clinical evaluation of the contention are needed. In any event, it would seem to be a worthwhile adjunct.

Antibiotics

All patients with liver injury should be given prophylactic antibiotics, starting before surgery and continuing until the danger of infection is past. Markowitz (1949) and Fine (1951) demonstrated the importance of utilizing antibiotics to prevent liver necrosis and infection in the anoxic liver.

Lastly, one should explore for and treat all other concomitant injuries of the patient. Most patients who die with hepatic injuries have associated injuries.[6]

Hemobilia

Hemobilia, first described by Owens in 1848, is a special complication of liver injury. Patients with hemobilia bleed into the biliary tree from a large central cavity in the liver. The associated mortality rate is more than 50 per cent.

If large wounds of the liver are sutured, a central cavity may develop weeks later, erode a liver vessel, and produce subsequent fatal hemobilia.[9] The possibility of this complication is good reason for leaving liver wounds open, and placing Penrose drains into the deepest part of the wounds. As would be expected, cases of hemobilia have been reported after liver wounds have been packed with gauze or hemostatic agents.

Treatment of hemobilia is often difficult; frequently one cannot locate the cavity with the bleeding source. Dissecting open a scar in the liver may lead one to the cavity. A hepatic arteriogram may be helpful if the patient is bleeding at the time of surgery. Ligation of the hepatic artery or subtotal hepatectomy has been resorted to.[9]

Case I*

This six-year-old boy was run over by a car, the tire passing over his upper abdomen and right thorax. Although he was conscious when admitted to the hospital, he soon developed a rapid pulse and low blood pressure and went into a coma. He was given a blood transfusion of 500 cc., and on regaining consciousness as he came out of shock, he began screaming because of the severe abdominal pain. There was marked abdominal tenderness and spasm, and bowel sounds were absent. Our impression at this time was that he had a ruptured viscus. His hemoglobin at the time of admission was 11.2 grams per cent. A roentgenogram of the chest (Fig. 1) showed infiltrates of both lung fields and air in the right pleural cavity. Our interpretation of the roentgenogram was that both right lower lobes of the lung were probably severely contused and that he had a pneumothorax on the right side. The abdominal film (Fig. 2) showed a loss of the properitoneal fat line, indicating blood or other fluid within the abdomen. The psoas shadows were obliterated, and a marked gastric distention was present.

A nasogastric tube was introduced and suction was started. Within a short time the patient was taken to the operating room. After anesthesia was started the pneumothorax was aspirated with a large bore needle. Abdominal exploration then revealed 1500 cc of blood within the peritoneal cavity; a 25-gram piece of liver torn from the dome of the right lobe was floating free in the abdominal cavity. All blood and free liver tissue were evacuated and the liver tamponaded with gelfoam. Drainage was established with one large Penrose drain and the wound was closed primarily. As reaspiration of the pneumothorax at the completion of surgery produced only 25 cc of air, no chest tubes were inserted into the right thorax. However, a tracheostomy was performed because large amounts of blood were coming up the trachea, apparently due to lung contusion. Two units of blood were given in all. The patient received tetracycline for the first five days he was in the hospital. Postoperatively the contusions of both lungs gradually resolved and the wound healed primarily. Drainage from the Penrose had stopped completely by the 10th day, and the drain was removed on the 12th day. The patient was discharged on the 13 day and has done well since.

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*The help of Roger Lienke, M. D., Robbinsdale Clinic, Robbinsdale, Minnesota, in the diagnosis and treatment of this patient is gratefully acknowledged.

Case II**

This 26-year-old female tripped while carrying a pistol which discharged, the bullet passing through the left upper quadrant of her abdomen. On admission she had minimal distress. Surgical exploration disclosed one hole through the margin of the left lobe of the liver and another through the lesser curvature of the stomach. A small retroperitoneal hematoma was present. Nothing was done to the liver wound, for neither hemorrhage nor biliary drainage was present. The stomach wound was sutured. The postoperative course was uneventful, and the skin incision was closed secondarily on the 6th postoperative day. She was treated with antibiotics and was discharged on the 11th postoperative day. No drains were used.

Summary

Injuries of the liver must de diagnosed early and treated by immediate surgery for best results. Severe abdominal pain and tenderness are the most important diagnostic signs. Shock and an elevated white blood count should lead one to suspect liver injury promptly, even in the unconscious patient. When there is reasonable doubt, laparotomy should be performed.

Treatment of liver injuries should be aggressive; as soon as shock is corrected, the patient should be operated upon. In 10 per cent of patients with liver injuries, bleeding will be present at the time of surgery and will require surgical control. The devitalized liver tissue must be removed. Antibiotics should be used for all cases. Gauze packs should never be used, and absorbable hemostatic agents only rarely. All concomitant injuries should be vigorously treated.

**The author is indebted to Dr. Earl G. Yonehiro, Department of Surgery, St. Louis Park Medical Center, Minneapolis, Minnesota, who permitted the use of Case II.

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Answer to WHAT'S YOUR DIAGNOSIS on page 1102

An abdominal paracentesis revealed blood. Laparotomy disclosed a large amount of blood and a rupture of the splenic capsule, which from history in retrospect probably ruptured during the severe coughing episode. A splenectomy was performed and the patient's recovery was uneventful.

People often grudge others what they cannot enjoy themselves.—Aesop

Increasing use of psychiatric consultation by many courts in our state is improving the disposition of problem cases. Undoubtedly the decisions of our judges are influenced by the sound evaluations on the part of physicians; and the offender, as well as society, will benefit.

● The ● Sexual ● Offender ● as seen ● in a ● Municipal ● Court

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THIS PAPER deals with the experience of a psychiatric consultant to the Saint Paul Municipal Court, who over a two-year period saw and evaluated 54 sexual offenders, part of a larger group of approximately 240 charged with committing misdemeanors during 1958 and 1959. All offenders had pleaded guilty or were found guilty of the charges against them, and were referred for psychiatric evaluation prior to release from jail or prior to sentencing. The group described here includes only those offenders the court saw fit to refer for psychiatric examination; it is believed, however, that practically all sexual offenders were referred for psychiatric evaluation by the municipal courts. Since persons committing more serious crimes or felonies are handled in the district court system, they are not included in this study.

The psychiatric evaluation consisted of an hour-long psychiatric interview and occasional supplementary interviews with the spouse or relatives, if indicated. Diagnostic impressions and recommendations were based on the findings during the interview and on information contained in thorough case studies done by the probation department on each offender. In addition, most of the offenders were given the Minnesota Multiphasic Personality Inventory (MMPI) prior to being seen by the court psychiatrist.

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Table I

A classification of antisocial acts used in psychiatric evaluation of offenders:

- A. Sexual Acts
  - 1. Exhibitionism
  - 2. Homosexuality
  - 3. Voyeurism
  - 4. Molesting of children
  - 5. Molesting of adults
  - 6. Transvestism
  - 7. Lewd phone calls
- B. Aggressive Acts
  - 1. Child-beating
  - 2. Wife-beating
  - 3. Other assault
  - 4. Destruction of property
  - 5. Disorderly conduct
- C. Theft
  - 1. Check-passing
  - 2. Shoplifting
  - 3. Stealing
- D. Alcoholism
  - 1. Drunkenness
  - 2. Drunken driving
  - 3. Drunkenness and sexual offense
  - 4. Drunkenness and aggressiveness
  - 5. Drunkenness and theft
- E. Traffic Offenses
  - 1. Speeding
  - 2. Careless driving
  - 3. Driving after revocation of license
- F. Miscellaneous

Classification of Offenses

The official legal charges used to describe antisocial acts do not adequately describe these acts from the psychiatric point of view. For example, the official charge "disorderly conduct" was found to cover a wide spectrum of offenses, including drunkenness, molesting, speeding, homosexuality, assault, and voyeurism. Because of the confusion that arises from the vagueness and all-inclusiveness of the legal terminology, a classification based on the nature of the antisocial act was developed (Table 1). This was used in analyzing the entire group of offenders.

Only the offenders who come under the heading "sexual" in Table I will be discussed here. Sexual offenders were chosen because not only is psychiatry interested in this group but they are a matter of concern to the community. The courts attempt to utilize every possible safeguard when dealing with sexual offenders because of the community's fear that they will commit further and more serious crimes.

Findings by Type of Offense

A summary of the findings for the entire group of 54 offenders is as follows: The average age was 31.9, with a range from 18 to 71 years. Only one of the group was a female. Thirty-five of the 54 were married; two were separated; two, divorced; and 15, single. Only ten had some college education. The entire group had a previous police record of 99 offenses, excluding minor traffic offenses. The most common sexual offense was exhibitionism in 17 cases. Incidence of homosexuality was 10; voyeurism, 9; molesting of children, 8; molesting of adults, 6; transvestism, 2; and lewd phone calls, 2. Following are summaries of findings for each of these groups:

Exhibitionism:

The exhibitionist usually was apprehended after driving his automobile past a group of young women and exposing himself to them. He was usually a married male in his late twenties. Often he had been involved in an argument with his wife or denied sexual intercourse by his wife just prior to committing the offense. Most of the offenders were found to be immature males with many concerns about their genital adequacy. The act of exhibiting the genitals seemed most often to be a reparative maneuver in which the offender was seeking reassurance of his genital adequacy. One third of the group admitted drinking shortly prior to the time of the offense.

The most common psychiatric diagnostic impression was that the offender suffered from a personality disorder. None was found to be psychotic. This group yielded the greatest number of potential candidates for psychotherapy.

Homosexuality

All the homosexuals were males. Most were apprehended by policemen assigned to men's washrooms in public buildings and department stores. Psychiatric evaluation revealed that most of this group had a history of long-term sexual deviation; in only one or two cases did it appear that the offense was an isolated homosexual act. The level of education was higher in this group than in any other. None of these offenders was found to be psychotic. Only one was thought to be a suitable candidate for psychotherapy.

Voyeurism

Most of the offenders in the voyeurism

group followed regular neighborhood routes where they window-peeked. Almost half admitted drinking just prior to the offense. Seven of the nine offenders were married, and, as in the case of the exhibitionists, indulged in this behavior after some domestic difficulty which stirred up feelings of genital inadequacy. None was found to be psychotic, and all were thought to be suitable for probation.

Molesting of Children

The offenders charged with molesting children were found to be the most disturbed from the psychiatric point of view. Most were considerably older than offenders in other groups. Generally they exhibited considerable fear of the adult female and were arrested after enticing a little girl off to a secluded spot where they exhibited themselves or attempted to fondle the girl. Two were found to be overtly psychotic, and commitment to a state hospital was recommended for both. Several were chronic alcoholics. One was mentally retarded. None were found to be a suitable candidate for psychotherapy.

Molesting of Adults:

For all offenders molesting adults, the victim was a female. One half of this group were drinking just prior to the offense; all were married. Two were diagnosed as having personality disorders; two as chronic alcoholics; and one as psychotic. For no member of this group was psychotherapy considered appropriate.

Transvestism:

Although several persons in other groups had histories of transvestism, there were only two offenders in this group: one was the only female among the subjects. The diagnosis of personality disorder (sexual diviation) was made in both cases. Psychotherapy was recommended for one offender.

Lewd Phone Calls:

Both persons arrested for making lewd phone calls were repeated offenders. They had arranged to meet with the victim only to be apprehended by the police. A diagnosis of personality disorder was made in both cases.

Diagnostic Impressions and Recommendations

A summary of the psychiatric diagnostic impressions is presented in Table II.

TABLE II

A SUMMARY OF PSYCHIATRIC DIAGNOSTIC IMPRESSIONS

DIAGNOSIS	NUMBER OF CASES
Personality disorder	31
Personality disorder and alcoholism	6
Personality disorder and mental retardation	2
Sociopathic personality	2
Sociopathic personality and alcoholism	3
Neurosis	1
Psychosis	3
Sociopathic personality and mental retardation	1
No psychiatric diagnosis	5

As can be seen, the great majority of the offenders were felt to display a personality disorder in which the psychiatric disorder had become a way of life and a part of the basic character structure. Most of the offenders were found to rely on the defense mechanisms of denial, rationalization, and projection. They had little insight into their problems and usually no motivation to change. Most of the offenders were not "hurting" internally in the psychological sense. If they were "hurting" at all, it was because of external factors such as imprisonment or loss of job due to notoriety arising from the arrest. Only three of the group were found to be psychotic. All three suffered from schizophrenia. One of the three had been arrested twelve times previously for similar behavior; another had been arrested twice before.

Following the psychiatric evaluation the psychiatrist was called upon to make recommendations to the court regarding case handling and disposition of the offenders. Table III contains a summary of the recommendations.

It can be seen that only a small number of the offenders were felt to be potential candidates

TABLE III

A SUMMARY OF THE PSYCHIATRIST'S RECOMMENDATIONS TO THE COURT

Recommendation	Number of Cases
Probation only	24
Probation and psychotherapy	9
Probation and Alcoholics Anonymous	3
Probation not suitable	6
Commitment as mentally ill	3
Imprisonment, then probation	3
Suspended sentence	1
No recommendation	5

for psychotherapy. An important factor in this decision was the lack of available psychiatric facilities for such persons. Probation, with its legal power reinforcing the offender's faulty control of impulses, was indicated in the majority of the cases. Commitment for state hospitalization was recommended for the three psychotic individuals.

Summary

As seen by the psychiatric consultant to a Municipal Court system, most sexual offenders are found to suffer from personality disorders; only a very few are psychotic. Exhibitionism is the most common sexual offense dealt with. Probation is most often recommended as a means of dealing with the sexual offender to insure that he does not perform repeated or more serious crimes. A psychiatric consultant to a Municipal Court can perform a useful service to the court and the probation department by screening the group of sexual offenders and finding suitable ways of working with and treating them. He thereby serves both the offender and the community.

Court Room Etiology

In my day when I got hit in the eye it turned black and blue promptly; sometimes even before I could get home.

In courtroom testimony it seems that the currently popular question is to ask the doctor whether it is not possible to feel the first effect of an impact a few weeks after the accident.

I would think it almost as logical in this modern day, when everything is accelerated, to expect the swelling, discoloration, and pain to develop before the blow.

It has been estimated that the average new drug requires five years of preparation and an investment of five million dollars.

Sincerity

Use no hurtful deceit; think innocently and justly and if you speak, speak accordingly.

—Benjamin Franklin

Silence

Speak not but what may benefit others or yourself; avoid trifling conversation.

Temperance?

Eat not to dullness; drink not to elevation.

The Pre-Game Meal

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Duluth, Minn.

Athletic directors and coaches, whether they be in high school, college, or the professional ranks, have recognized the effect of anxiety and tension on individual players. The physician, of course has been well aware of this problem. The emotional reaction varies with the personality makeup of the individual, but no participant in the game escapes completely. The physical demands of a game are an additional factor, producing symptoms which cause discomfort and sometimes impair the player's ability in the game. The most common physical symptoms which appear during or prior to a game are nausea, vomiting, diarrhea, muscular cramps, and excessive dryness of the mouth (cotton mouth). Anxiety and physical exertion are usually responsible for these symptoms.

It was demonstrated by the football team at the University of Nebraska in 1959[1,2] that the pre-game meal plays a role in the symptoms which develop before or during a game. A solid meal eaten shortly before a game resulted in late emptying of the stomach and small bowel; nausea and vomiting readily followed. The demand for an increase in the blood supply by the stomach and small bowel causes a diversion of the blood from the muscles. This decrease in the efficiency of the muscles, coupled with loss of salt by perspiration, could account for the muscular cramps. The football team experimented with a pre-game liquid meal consisting of non-fat milk solids mixed with water and flavoring. The results were reported as highly favorable.

Because of similar problems with basketball players, this pre-game liquid meal was used during the 1961-1962 season by the basketball team of Cathedral High School at Duluth, Minnesota. Several problems presented themselves. The most important of these were the appraisal of the players' acceptance or rejection of the meal, whether anticipated symptoms occurred, what effects there might be on the team's efficiency in play, and the convenience of the program. The cost of the project was also given consideration.

This therapeutic nutrient, high in carbohydrate content, comes as a powder in a one or five pound can. For a quart of beverage three cups of the powder are added to three cups of water. This supplies 1750 calories, 105 grams of protein. For palatability it is necessary to add flavoring and to keep the mixture cool.

As a rule each of the ten players of the varsity squad took eight to ten ounces of the liquid meal about four hours prior to the time of the game in lieu of the regular evening meal. All games, except those of the tournaments, were played in the evening, and the boys were instructed to eat their usual lunch at noon. This generally consisted of two to three sandwiches, fruit, milk, and cookies.

In the early part of the basketball season, some of the boys were reluctant to take the liquid. There was some difficulty in securing the proper flavor. A new preparation flavored with chocolate or vanilla received more enthusiastic acceptance.

The condition of the players during and after each game was recorded. No nausea, vomiting, or diarrhea appeared before, during, or after any game. The 'cotton mouth' was reported infrequently. There were no muscular cramps. The endurance of the team was especially gratifying. Stamina was considered good, particularly since the style of play used by the team was a fast break on offense and a pressing man-to-man defense. Morale, though difficult to evaluate, was considered improved by the program. Equally important, it was the concensus of the entire team that the special pre-game liquid meal made a contribution to their feeling of well-being and enjoyment of the basketball season.

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Table 1

Casualties in Relation to Civil Defense Measures: Effect of an Early "Moderate" Attack

Civil defense measures	Casualties (millions)
None	90
Minimum fallout	30-70
Minimum fallout plus 70 per cent strategic evacuation	5-25

Table 2

Casualties in Relation to Civil Defense Measures: Effect of Large-Scale Late Attack

Civil defense measures	Casualties (millions)
None	160
A complete program	
Protected SAC	8-25
Unprotected SAC	40-55
Seventy per cent strategic evacuation	
Protected SAC	3-5
Unprotected SAC	12-20
Minimum fallout	
Protected SAC	60-85
Unprotected SAC	More than 85

EINER W. JOHNSON, Jr., M. D.*

Rochester, Minnesota

The Medical Problems

Physicians have an important and specific role to play in a society continually threatened with nuclear disaster. The author emphasizes the triple problem of survival, organization, and education as it applies to the medical profession of our state. Needless to say, continued effort must be made toward wider dissemination of the basic principles of conduct which will permit the surest survival of the greatest number of our people. The author properly emphasizes the necessity of adequate education for paramedical individuals who will carry such an important load following a large scale nuclear disaster.

WE, IN THIS NATION, have not been previously challenged with a direct threat to our civilian population and installations. To be sure, this country was invaded and our capital sacked in the War of 1812. Also, the Civil War produced tremendous local destruction of cities, homes, and other civilian installations; but this chaos, this dislocation, was confined almost entirely to the areas of actual conflict.

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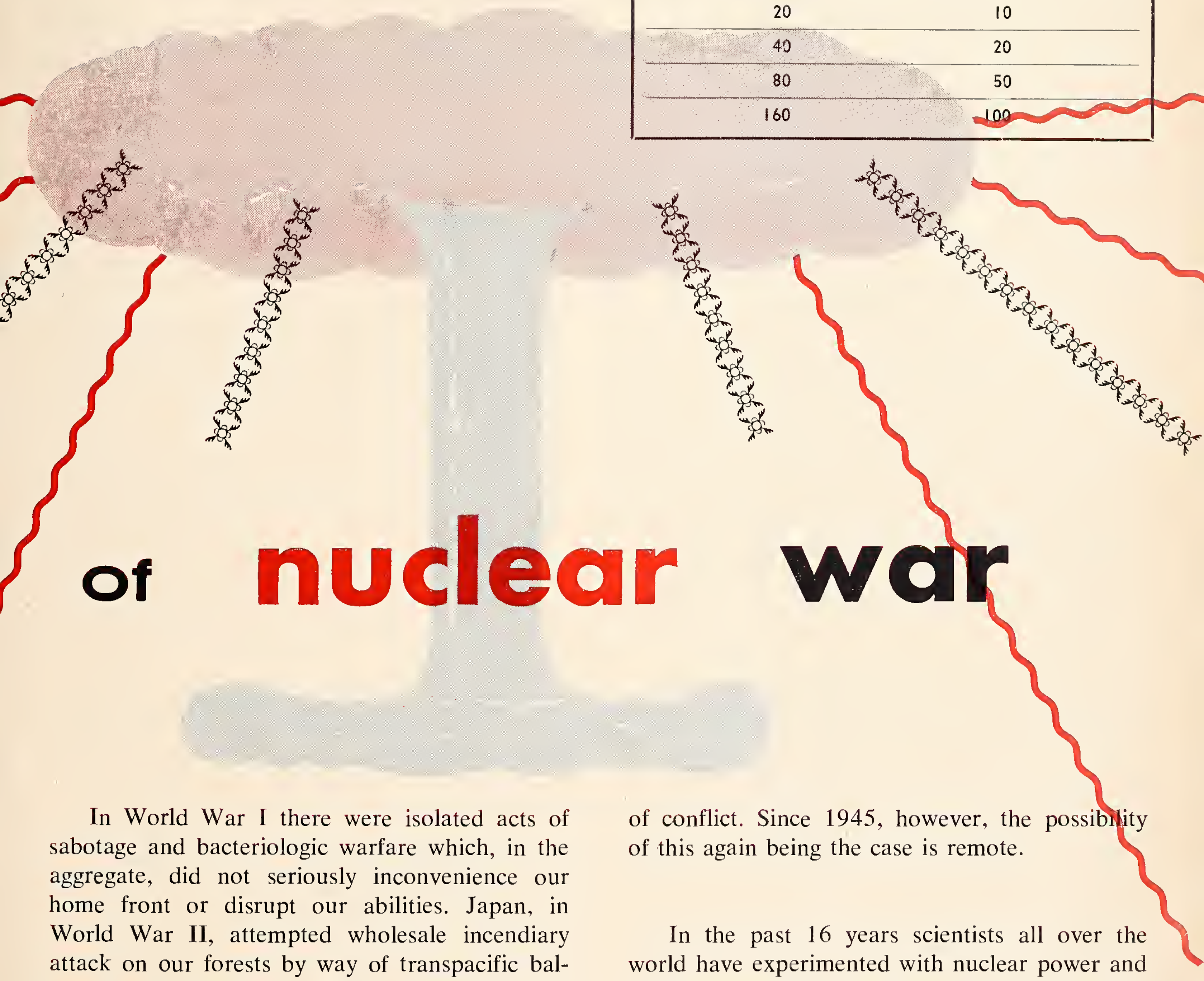
This paper is part of a course in disease and disaster management arranged by the Educational Program Committee and Disaster Committee of the Mayo Clinic and presented to the staff and fellows.

Table 3

Distinguishable Postwar States

Dead (millions)	Economic recuperation (years)
2	1
5	2
10	5
20	10
40	20
80	50
160	100



# of nuclear war

In World War I there were isolated acts of sabotage and bacteriologic warfare which, in the aggregate, did not seriously inconvenience our home front or disrupt our abilities. Japan, in World War II, attempted wholesale incendiary attack on our forests by way of transpacific balloons, actually shelled a refinery on the California coast, and sponsored isolated attempts at sabotage of our war potential; but again none of these attempts by Japan or other axis powers seriously affected our industrial ability or inconvenienced our civilian population.

The history of our war participation has been, with few exceptions, to wage war in another geographic area without serious exposure of our industries or civilians to the actual, firsthand effects of conflict. Since 1945, however, the possibility of this again being the case is remote.

In the past 16 years scientists all over the world have experimented with nuclear power and have developed it to staggering proportions. No longer can we or any other country rely on the old concept of protection of our homeland by the vagaries of geography. It seems unlikely that such an efficient means of destruction as nuclear power can, or ever will, be effectively controlled or banished from use as a weapon of war. Thus, any thoughts of future armed conflict must of necessity be concerned with the direct effect of such conflict on our homeland and its civilian population.

Also, it seems unrealistic to assume that complete and total destruction of all life will occur and thus prevent, or remove from our concern, the problem of national disaster at the hands of an aggressor nation. Aggressive nations in this world would like to have us think that total destruction is the inevitable result of such conflict, that industrial recovery would be impossible, and that postattack life would be unbearable, if not impossible.

If we believe strongly in our philosophy of life and of government, if we believe that acquiescence is not the best way to meet transgression, and if we are committed to the belief that the nation with the strongest civilian population and industrial potential will survive, then we must squarely face up to the problems created by direct attack on the continental United States.

The Problems for the Physician

Although these problems will take many forms and involve all disciplines, for the physicians there are two with which he is most concerned. There are survival, and the medical care of the injured. Survival for oneself and one's family is the responsibility of each of us. On the other hand, the medical care of the injured, and the problem this entails, are the concern of the whole medical profession.

To adequately appreciate the challenge of thousands, perhaps millions, of casualties, and to assess the effects of these on the medical profession, it is informative to review our behavior as doctors and as humans in previous disasters of limited size. For this purpose we might analyze events as they occurred in Worcester County, Massachusetts, on June 9, 1953.

Disaster in Worcester County, Massachusetts

This heavily populated area was struck by a tornado at 4:35 p.m. with no advance warning; the catastrophe had "blown itself out" by 5:35 p.m. without damaging physically any of the five hospitals in the area. The dead totaled 94, and the injured who received medical care in a hospital have been variously estimated but must have reached a figure of 900. All told, 1500 persons were injured, which means that this was a limited disaster. Since this tornado passed through a heavily congested area and from rural to urban to rural communities, it was selected as a study project by the National Research Council. Accordingly, six weeks after the disaster an investigating team was sent into the area to inquire into the medical handling of the disaster. Several conclusions were made from this study.

The Organization of Volunteers

The response of the average person was to subjugate his own interests to those less fortunate than he, and to initiate active physical participation in the business of helping others. This volunteer response was spontaneous and undisciplined, and demonstrated a future need for control and guidance of the mass of volunteers.

Lack of Organization Demonstrated

A striking lack of central organization and planning was apparent. Also there seemed to be a lack of responsible central authority with power to implement actions in the best interests of the entire area involved. This lack of organization was evident in many ways.

1. There was a lack of communication between the disaster area and adjacent areas, between hospitals, and between hospitals and other agencies. Telephone exchanges were flooded, telephone communication proved inadequate, and the only interchange medium that functioned was radio. There were too few police and cruiser cars to keep up with the demand.

2. Uncontrolled evacuation of the casualties resulted in the overloading of some hospitals while others stood idle or were only moderately busy. First aid was almost absent.

3. Traffic control was nonexistent or impossible, resulting in traffic jams on all roads leading to and from the disaster area.

4. The agencies involved in disaster management were initially ineffective, because of indecision, ambiguous lines of responsibility, and, in some instances, lack of cooperation.

5. Hospital administrative and medical staffs were unprepared for disaster. There was no advance planning and there were improper use of qualified personnel, inadequate control and sorting of incoming patients, and no prior arrangement for standby sources of equipment, power, or supply.

6. From a purely medical standpoint some unfortunate decisions were made. Most of the physicians decided to treat major and minor soft-tissue wounds by hasty or inadequate debridement and primary closure—a decision that contributed greatly to the incidence of wound sepsis. Only 23 wounds were treated properly by debridement and planned delayed closure. Six weeks after the disaster the district nursing association still was following some 600 patients with septic wounds, despite a total of only 1500 injured.

7. One other problem concerning the medical staff and administrative personnel of the hospitals is noteworthy. This is the feeling of independence and of loyalty to the particular hospital in question, so that transfer or assignment of patients for the common good met with much resistance. This attitude prevented the available hospital facilities from being used to the fullest. One smaller hospital in the process of expansion was a good example of this independent attitude, which worked to the detriment of the patients treated there. On the other hand, a shining example of proper patient and facility allocation was afforded by the care of 14 neurosurgical casualties.

These then are the conclusions drawn from the Worcester tornado disaster. To be sure, they do not always cast credit, but they serve their purpose if they indicate the problems we face and the avenues down which we should direct our efforts.

This Worcester disaster has been much quoted and at times the authorities responsible have been maligned. Regardless of the charges or the facts, it still serves as a well-documented incident which increases our knowledge of disaster behavior and management, and also gives us a yardstick by which to measure the impact of future catastrophes.

The Hazards of Thermonuclear War

Mr. Herman Kahn[1], working with the Rand Corporation, has, since 1948, conducted studies and research into the relationship between weapons and international strategy. His book "On Thermonuclear War" details much of the fundamental thinking devoted to the effects of such warfare on this country, and the casualty figures to be presented are from those studies. Consider first the numbers of casualties, in relation to various civil defense measures, resulting from an early attack on our Strategic Air Command bases and the 50 largest urban areas. One can readily see, from table 1, that this so-called moderate attack would produce casualties of staggering proportions and would inundate the surviving members of the medical profession.

If these estimates defy understanding, consider then the effect of a large-scale late attack against our Strategic Air Command bases and 157 urban areas. This attack would reach cities in the 25,000 to 50,000 population range.

Casualty Estimates

The casualty estimates, as shown in table 2, are of such magnitude as to be impossible of comprehension, and yet able scientific and philosophic minds, utilizing the available data, have made these calculations in good faith. We must use some statistics as the basis for our conclusions, and these seem least challengeable. Tragic as these calculations are, they still produce definitely distinguishable postwar states. The distinguishing feature is the length of time needed for economic recuperation, and this time is related to numbers of casualties, as shown in table 3.

A casualty figure of 160,000,000 is so staggering to the understanding that it is useless in some respects, but it does give one an idea of the total effect of modern war on this country. However, Austin, Minnesota, for instance, or Rochester, could be a part of these statistics, and it will serve our purposes just as well, and probably better, to consider the effect of such an attack on Rochester or on any city with a population of 40,000.

Imperils

Assume that this city receives a direct hit by a 20-kiloton weapon and that the distribution of the population is uniform. According to unclassified parameters for blast, heat, and radiation, 14,583 surviving casualties requiring medical treatment would result. These casualties would be evenly divided between burns, trauma, and a combination of these two. Note that radiation injury has not been included, and since this is treated as symptoms occur, and usually not immediately, it has been deleted from the computations. Reliable estimates place the number of casualties requiring medical care of a lifesaving nature within the first 24 hours at 6450. To give this lifesaving care, most of which would be surgical in nature, would require the uninterrupted services of 614 surgeons and 614 anesthesiologists or anesthestists for 24 hours.[2] The figure of 614 was derived from a time study of surgical teams done during the Korean incident.

Obviously, few if any cities of 40,000 can supply doctors in these quantities. As a matter of fact, population surveys indicate that the average city of 40,000 population has approximately 125 doctors of all classifications. Thus one can see that medical facilities and personnel in this theoretic attack have been overwhelmed and a tremendous gulf has occurred between demand for medical care and the community's ability to supply such care.

Burns

Consider the casualties from burns alone. Approximately two thirds of these casualties will have varying degrees of burn injury, or 9479 burns to be treated. About one half of these burns will involve from 5 to 20 per cent of the body surface (4739 cases); 40 per cent will involve 20 to 40 per cent (3792 cases), and 10 per cent will involve 40 per cent or more (948 cases). To treat just one patient with 40 per cent or more of the body surface burned requires major outlays of equipment, supplies, and personnel. Some Rochester people may recall the Franklin Heating Station explosion and the disorganization created in the hospitals by the 20-odd burns that resulted. The director[3] of the Army's burn center at Brooke Army Medical Center acknowledges that the admission of 15 patients with significant burns would quickly overwhelm the facility and the staff. Imagine the impact of 948 casualties with 40 per cent or more of their body surface burned. Facilities, supplies, and personnel are not available under any conceivable circumstances to answer this challenge. The demand cannot be met by the available supply.

Many other examples of this inability of supply to meet demand in the face of many casualties can be cited. But the two examples given above serve to illustrate the fact that under most of the supposed conditions of modern warfare, the ability of the medical and paramedical professions to supply medical care to the many casualties in the traditional manner will be wholly inadequate for the job. This inadequacy on our part will result in increased rates of mortality and morbidity among the injured. These increases would be due to disparity, that is, the difference between the available medical personnel, supplies, and equipment on the one hand, and the huge number of casualties generated by thermonuclear warfare on the other hand. Disparity is a real and genuine concept.

Survival

In the foregoing, an attempt has been made to detail the problems posed to the medical profession by the threat of modern warfare. There are three dependent, yet interlocking, problems that we must face.

The first of these is personal survival. Our place in society, either by choice or by press of circumstances, is to administer to the sick and injured. A disabled or dead physician is a liability to his family and his community. A live physician can offer his services and thus tangibly affect postattack events in his area. Our first problem, then, is personal survival.

Organization

Our second problem is organization. Authorities agree that many of the tragic aspects of the Worcester tornado would never have occurred if the medical personnel and facilities in the area had developed and practiced a plan for use in an emergency. Only one of the Worcester hospitals had such a plan, but this had never been discussed with the medical staff, and no drills had ever been held. If the appearance of millions of casualties finds us with no organization nationally or locally, we can expect even greater calamities in medical management than have ever occurred before. Less than a fourth of our states have functioning civil defense arrangements, and the Office of Civil Defense Mobilization has been treated as a football, lacking in political glamor or appeal. A functioning plan of organization for the total country is needed. But we need not wait for the development of such a countrywide plan to put our own house in order.

Those of us who treat the sick and injured should use these relatively peaceful times to assess our capabilities, plan for the future, and prepare for what may come.

Education

Our third problem is that of education—not only education of our colleagues, but also education to upgrade paramedical occupations so that they may share in the job ahead. Wholesale first-aid education of the civilian population is also necessary.

The procedure of debridement and primary closure was done almost routinely in the Worcester disaster, and produced much morbidity. For years textbooks of military medicine, and our more recent war experiences, have shown that this is a risky business at best. Many other aspects of the proper care of trauma are not widely known or practiced by doctors in civilian life. Frequently one sees patients with trauma who have been treated improperly and without regard for the principles of wound care. These principles and many other aspects of the care of trauma could be emphasized again to all doctors to the benefit of all.

In another vein, but no less important, we should recognize the large pool of properly oriented people who comprise the paramedical occupations. These people can be upgraded by education so that they can assume a greater share in the management of casualties, and thus free physicians for the more complicated and demanding problems. Finally, the average civilian can learn first aid if properly exposed to teaching, and can administer to many of his own ills.

These then are our problems: survival, organization, education.

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2. Rumer, G. F.: Sorting: A Possible Solution to the Management of Mass Casualties. In: Symposium on Management of Mass Casualties. Army Medical Service School, Brooke Army Medical Center, Fort Sam Houston, Texas, December 1960, pp. 141-156.
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Oral Polio Vaccine

The incidence, assuming all cases to have been vaccine induced, is but 11 cases among more than 13 million fed. This is less than one case per million doses given. When the risk is related to age it is apparent that adults are exposed to a greater hazard than are children.—U.S. Public Health.

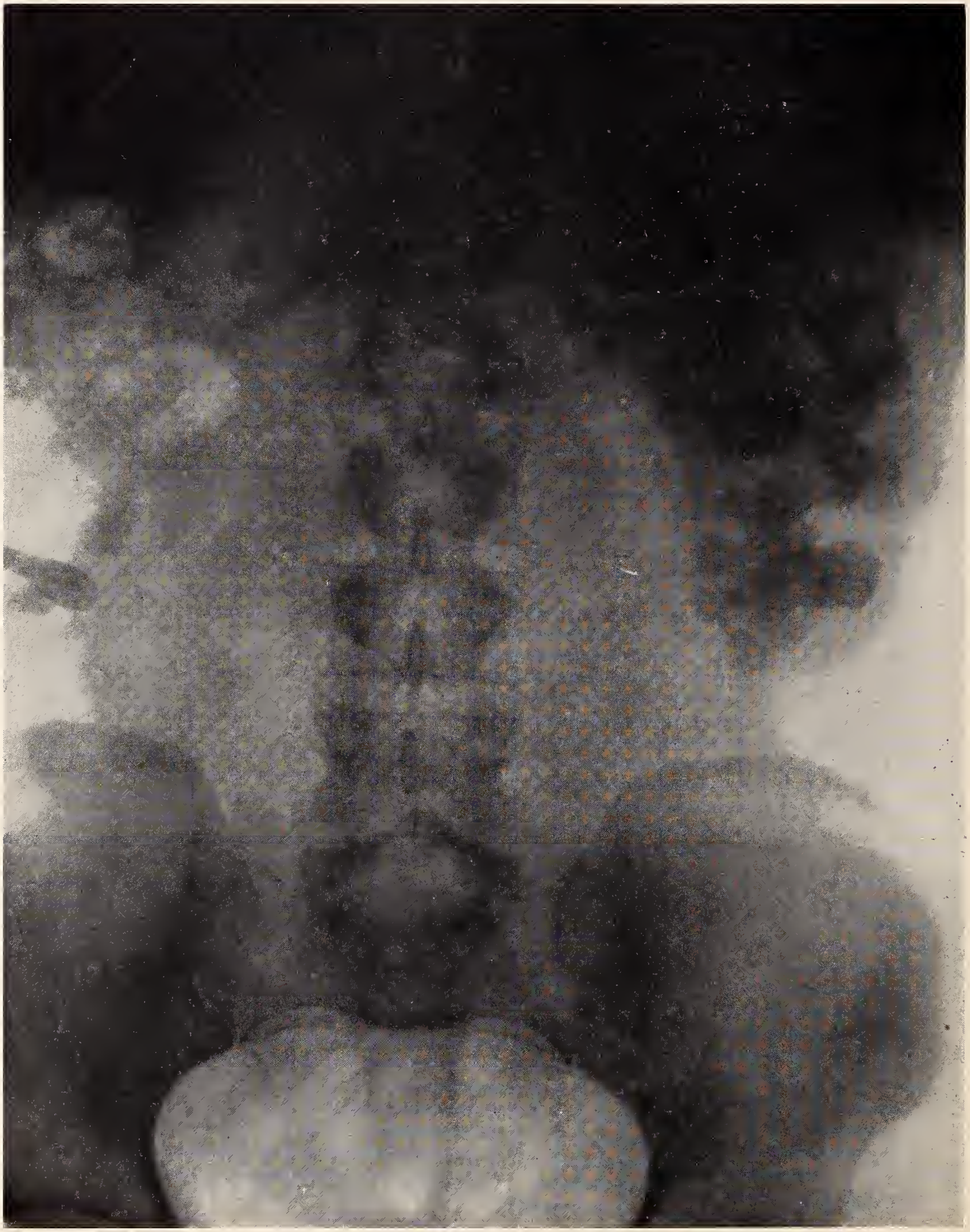
AMPUTEE CLINIC — MINNEAPOLIS CURATIVE WORKSHOP

The Minneapolis Curative Workshop now has this new Amputee Clinic service in operation. The Clinic is held the second Tuesday of every month under the direction of an orthopedic surgeon and a physiatrist. The purpose of the Clinic is to evaluate the condition of the patient, to make recommendations and to prescribe a prosthesis if so indicated. The Clinic staff operates as a team in deciding what will be best for the patient. The team includes, besides the doctors, occupational and physical therapy supervisors, medical social worker and representatives from the different artificial limb companies.

Referrals to the Clinic are made by the attending physician only. The fee of $30.00 includes a pre-clinic examination by the physiatrist and the social worker respectively, the Clinic visit for evaluation and prescription and two follow-up visits. The Curative Workshop as a United Fund Agency, may make fee adjustment for patients in adverse financial circumstances, to people living or working in Hennepin County.

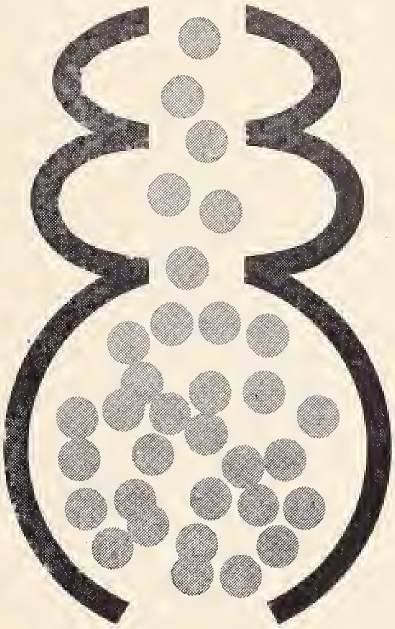
It is more important to know where you are going than to get there quickly. Do not mistake activity for achievement.—Mabel Newcomber

X-RAY CONFERENCE



STAG HORN CALCULUS

This is usually the result of long standing renal disease usually secondary to chronic hydronephrosis or inflammatory disease.



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Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

NOTE: Lomotil is an exempt narcotic preparation.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastraintestinal, Acta Gastroent. Belg. 21:674-680 (Sept.-Oct.) 1958.
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1. Groskloss, H.H., Clancy, C.L., Healey, E.F., McCann, W.J., Maloney, F.D., Loritz, A.F.: Clinical Medicine (Sept.) 1955.

Study involving 287 patients. 261 patients experienced excellent to good results with Bonadoxin for relief of nausea and vomiting of pregnancy. No side effects reported.[1]

2. Albertson, H.A., Trout, Jr., H.H., Daily, F.W.: The American Journal of Surgery (Sept.) 1956.

"As a result of this study, it is our belief that the routine prophylactic use of the combination of meclizine hydrochloride and pyridoxine is a safe and effective method for lessening the incidence of postoperative nausea and vomiting. We are employing this preparation as a routine pre-operative medication."[2]

3. Goldsmith, J.W.: Minn. Med. (Feb.) 1957.

Study involving 620 patients, 537 patients experienced moderate to complete improvement of nausea and vomiting of pregnancy with Bonadoxin. Toxicity and intolerance to the medication in the dosage employed in these studies was zero.[3]

4. Codling, J.W.; Lowden, R.J.: Northwest Med. (March) 1958.

Study involving 76 pregnant patients with nausea and vomiting. The results indicated an overall response in 70 of 76 patients treated. No side reactions were observed in this clinical study.[4]

5. Bentley, M.D.: Journal of the Mich. State Med. Soc. (Sept.) 1959.

[Bonadoxin] "was found clinically effective in the prevention of pre-operative and postoperative nausea and emesis in 157 patients who underwent ocular surgery, while control drugs alone could not completely eliminate the symptoms. Bonadoxin did not cause side reactions in the preoperative or postoperative phase of this study."[5]

6. Bethea, R.C.: International Record of Med. (May) 1960.

"Our investigation of this drug indicates that in 88 per cent of the cases satisfactory relief of the distressing symptoms of early pregnancy was obtained without undesirable side effects, including sedation."[6]

7. Sklaroff, D.M.; Karayannis, N.: Current Therapeutic Research (June) 1962.

"Based on these results, indicating 92 per cent effectiveness, meclizine-pyridoxine (Bonadoxin®) may be considered a valuable compound in the control of post-irradiation nausea and vomiting. The preparation proved to be safe and fast-acting in bringing therapeutic relief to carcinoma patients with radiation sickness."[7]

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Editorials

The Ostrich Dressing

IT IS CUSTOMARY to cover the operative wound with a sterile dressing. Gauze squares are deftly and efficiently picked up with a forceps and passed along one by one, from nurse to doctor to patient ad infinitum until — "Hold, enough!"* The procedure is amusingly reminiscent of a flock of cedar waxwings daintily but mechanically passing along a berry from one to another to another, as if operating on an assembly line or engaging in an indurance test.

Then adhesive strips are applied to the dressing to hold it — to cover it — to conceal it — to bury it "out of sight, out of mind." Should a bit of oozing occur in the postoperative period and produce an incongruous, conspicuous spot on the lily-white surface, a nurse rushes in with a can of sterile dressings to cover the spot.

More oozing, another rushing-in-nurse with another can of sterile dressings. "Out, damned spot! out, I say!"**

The incision must not be looked at until the fourth postoperative day — on doctor's holy orders; in the meantime the dressing must be kept immaculately spot-proof by constant reinforcements. The incision must be made to understand it is to "lay low" and not "act up."

Under this baffle of gauze and dressing, and adhesive and reinforcements, the skin perspires; it does not breathe; it gathers its own special brand of sterile accumulata; it mascerates. The patient may have a slight temperature elevation; there may be a bit of distention. But the chest sounds clear; the heart is all right. There is no thrombophlebitis, no Homan's sign. Has anyone looked at the wound? No, of course not! Didn't the doctor specify a moratorium of four days?

What might be happening under this momentous canopy of sterile dressings, adhesives, reinforcements — this forbidden ground with its aura of mystery and sanctity — this most important visible index of the healing process — is anybody's guess.

Let's not overdo the dressing ritual.

Carl O. Rice, M.D.

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* Shakespeare, Wm.: "Macbeth," Act V, Scene 8

** Ibid. Scene I

Angiography of the Coronary Arteries

FALL AND DELANEY, in their case presentation in the October issue of MINNESOTA MEDICINE, point out the value of coronary angiography in patients giving a history of atypical angina pain. Of more significance, however, is their reference to the use and the importance of angiography as a diagnostic tool for the future.

Until recently coronary angiography has been, in the main, of academic interest only. It will play a role of increasing importance with the development of direct surgical methods for the relief of obstructive disease of the major coronary arteries. It is axiomatic that improvement in the diagnostic procedures must accompany or precede improvement in medicine or surgical treatment.

Coronary angiography is a good exemplification of this rule. We rely heavily on the description of the pain and the electrocardiographic evidence

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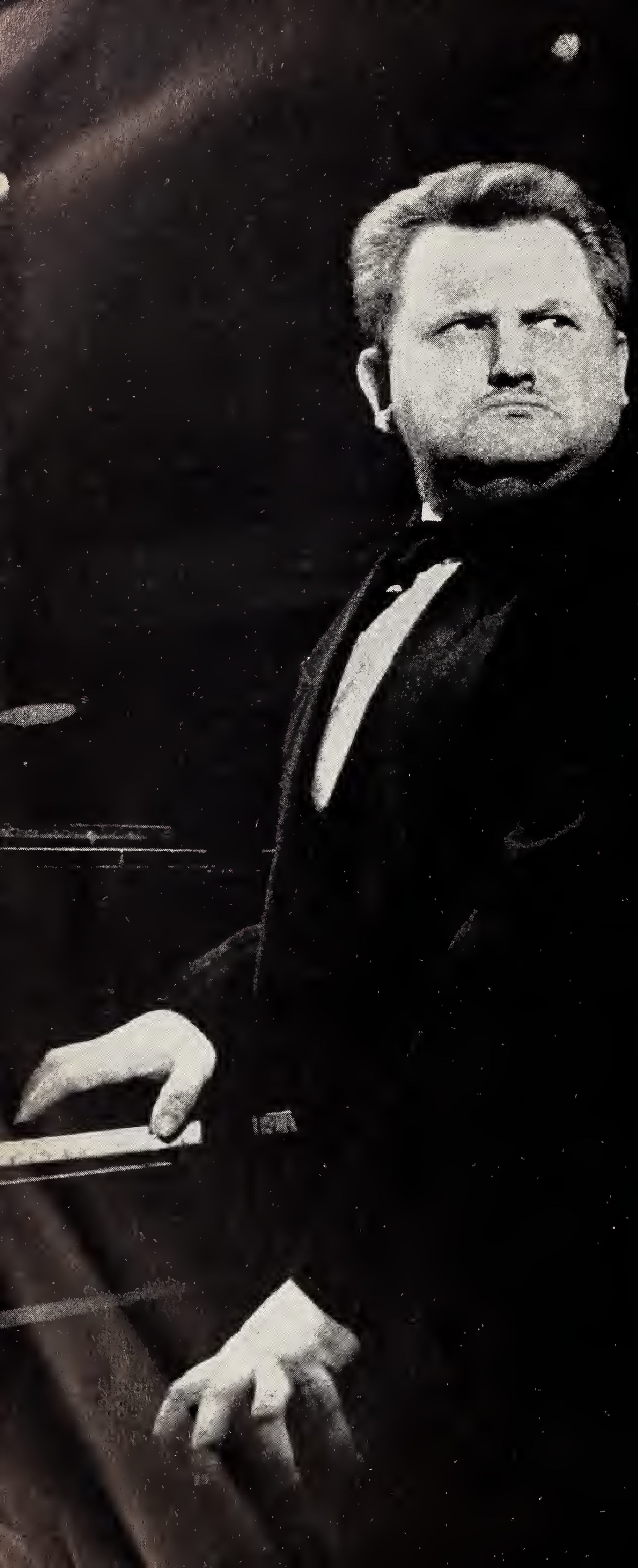

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Dihydrocodeinone Bitartrate (Warning: May be habit-forming)	5 mg.
Homatropine Methylbromide	1.5 mg.
Pyrilamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10 mg.
Ammonium Chloride	60 mg.
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in making the diagnosis of coronary artery disease. Either one of these diagnostic signs may be atypical. Neither the history nor the electrocardiogram localizes the affected vessel. Angiography not only demonstrates the presence or absence of filling defects in the coronary arterial tree, but can also localize these lesions. Thus it permits for the first time the extension of diagnosis to the precise vessel and segment involved. Whether such disease is general or localized within the coronary system is the first step beyond the diagnosis of coronary arteriosclerosis to determine whether or not surgery can possibly be of benefit to the patient. Such information will have to be available to the clinician if he is to make a sound judgment, as to the feasibility or advisability of a plastic repair of the coronary arteries. It is well appreciated that coronary angiography as done today is in a developing stage. X-ray and pathologic correlation leave much room for improvement, but knowledge begets knowledge. Angiography may open new avenues of therapy in coronary disease.

James C. Dahl, M. D.
Minneapolis, Minn.

Sir William Osler

The wisdom of the past in medicine can be applied to the present. It is unfortunate that many of our great scholars have been forgotten and their names only recalled as part of a clinical syndrome. Their writings have been forgotten, except for those interested in medical history. Much that they wrote about, and much in their principles, has become part of the legends of the past. In a recent interview with two senior medical students, I was surprised to find that neither knew anything concerning Sir William Osler other than that the name was associated with two clinical syndromes they had seen on their clerkship.

The fundamentals expressed in Osler's first treatise on internal medicine are still of the best. The classical descriptions of disease in his text book on medicine have no equal. His essays belong to the great classics of American and English literature. His aphorisms have been collected into a small monograph by William Bean. The finest thing that could befall a medical student would be required reading of Osler's original text book of medicine, as well as his essays, and to carry in his mind Osler's aphorisms.

John F. Briggs, M. D.
St. Paul, Minn.

OSLER-VAQUEZ SYNDROME
(Polycythemia vera)

This syndrome was first described by Vaquez in 1892 and by Osler in 1903. It represents a primary type of erythremia, hyperplasia of the bone marrow, and splenomegaly. It is sometimes familial, and its insidious onset usually begins in middle life.

Plethora is a common manifestation. Symptoms include dyspnea and a sense of undue warmth. The red blood count varies between 7 and 10 million with 23 to 30 grams of hemoglobin. The bone marrow shows myeloid hyperplasia. Splenomegaly may be marked. Rarely hepatomegaly and cirrhosis may be present. Thromboses and infarcts are frequent complications, especially when the count is at a maximum level.

The syndrome should be differentiated from secondary types of polycythemia which result from cyanosis, methemoglobinemia, or sulfhemoglobinemia or accompanying Ayerza's syndrome.

Therapy includes nitrogen mustard and P32. As a rule, either preparation suffices to control the erythrocytosis. Phlebotomy affords more rapid symptomatic relief. The ultimate prognosis is fair to good.

End

asthma attack averted
. . . in minutes

patient protected
. . . for hours

Nephenalin®
(the dual-action anti-asthmatic tablet)

. . . works with nebulizer speed—provides four-hour protection

One NEPHENALIN tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.
Dosage: Hold one NEPHENALIN tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.
Supplied: Bottles of 50 tablets. For children: NEPHENALIN Pediatric, bottles of 50 tablets.
Caution: Do not administer NEPHENALIN with epinephrine. The two medications may be alternated at 4-hour intervals. NEPHENALIN should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. THOS. LEEMING & CO., INC., New York 17, N.Y.

Special Article

ROBERT D. SEMSCH, M.D.*
Wayzata, Minnesota

FREEDOM OF CHOICE AND PROFESSIONAL JUDGMENT

THE DRUGS WE PRESCRIBE

TWO OF THE most valuable tools a physician has are his freedom of choice and his professional judgment. So valuable are these to him that he has gone to great lengths to achieve and protect them. During his training he has learned how to acquire and to use these instruments; after obtaining his degree he has subjected himself to many screening tests to evaluate his own worthiness of them. He has built a mighty fortress around these two valuable tools to protect them.

The building blocks of this fortress are his Physician's Oath, his moral ethics, his conformity to the rigid construction and by-laws of his medical societies and to the rules and regulations of his hospital and staff affiliations, and above all, his personal and moral integrity. It is these that guarantee to him, and especially to his patients, the high quality of medical care. This unfettered freedom and this self-imposed censorship have developed the doctor of this country to among the best in the world.

To accomplish this goal, however, the doctor has to have many allies. One of his great allies is the pharmaceutical profession; without the pharmacist, the physician would be lacking one of the most valuable parts of his armamentarium, i. e., modern drugs. So indeed the medical profession is deeply indebted to the pharmaceutical profession.

Generic vs. Brand Name

But yet as we walk hand in hand and look back at our accomplishments and forward to the future for greater ones, our sun is suddenly eclipsed by an ominous cloud—federal control of our freedom and of our judgment. There are those who propose to thwart under various disguises the advancement of pharmacy and medicine with needless and costly controls. One of these I refer to as the Kefauver Caper—the attempt to force the physician to abandon his freedom in the choice of drugs by requiring him to use generic terminology in place of brand names.

Before going into detail as to how this proposed legislation would curtail the freedom of the physician, let us examine this proposed legislation carefully. In effect, it would require the physician to abandon the use of brand-name drugs and to substitute the use of generic names implying generic equivalents. I propose that there is no such thing as a generic equivalent. Generic names, yes, but not generic equivalents.

The word "equivalent" implies that a drug produced by different manufacturers is identical not only in its chemical composition but also in

Continued

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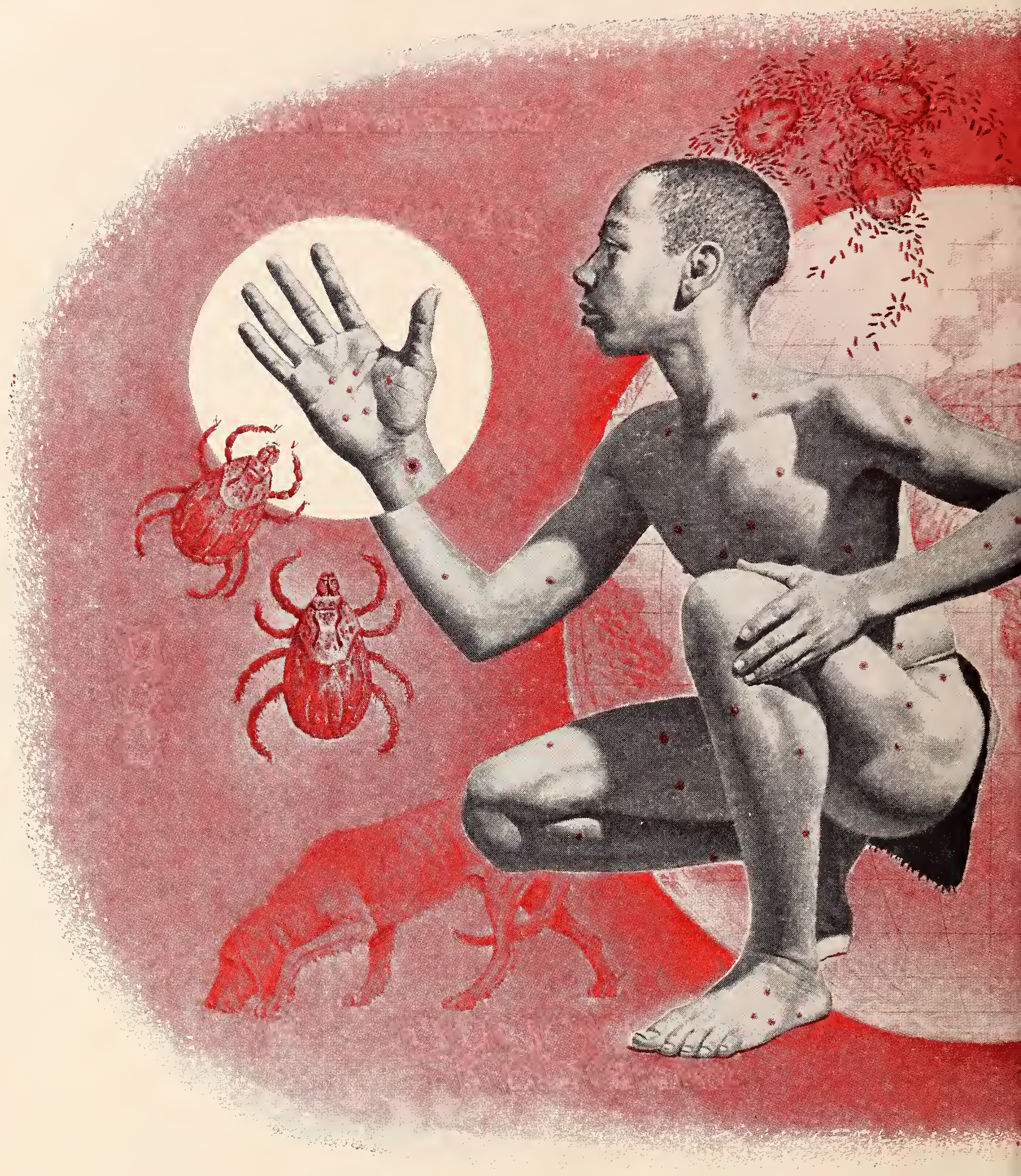
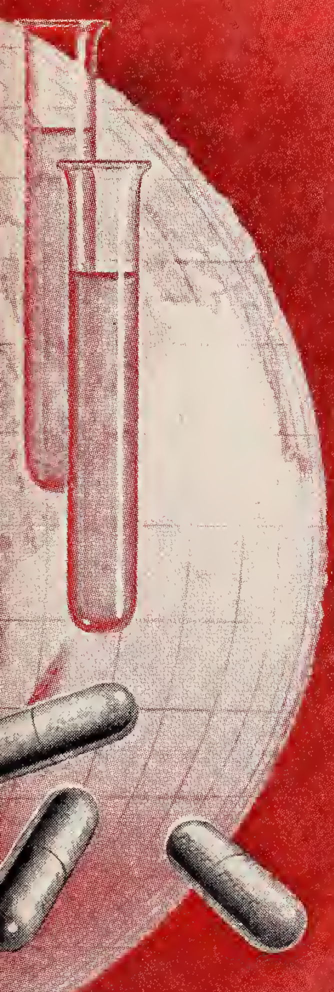
*Dr. Semsch is chairman of the Public Health Education committee of the Minnesota State Medical Association. He delivered this talk May 8, 1962 to the Professional Pharmacy Section of the Minnesota State Pharmaceutical Association Convention at the Pick-Nicollet Hotel, Minneapolis, Minnesota.



from boutonneuse fever in Africa

Whether treating boutonneuse fever, bronchopneumonia, or a host of other infections, physicians throughout the world continue to rely on the effectiveness, relative safety, and exceptional toleration of Terramycin in broad-spectrum antibiotic therapy. This continuing confidence is based upon thousands of published clinical reports and successful experience in millions of patients. *The next infection you see will more than likely be "Terra-responsive."*



Science for the world's well-being® **Pfizer** PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. New York 17, New York

IN BRIEF The dependability of Terramycin in daily practice is based upon its broad range of antimicrobial effectiveness, excellent toleration, and low toxicity. As with other broad-spectrum antibiotics, overgrowth of nonsusceptible organisms may develop. If this occurs, discontinue the medication and institute appropriate specific therapy as indicated by susceptibility testing. Glossitis and allergic reactions to Terramycin are rare. For complete information on Terramycin dosage, administration, and precautions, consult package insert before using.

More detailed professional information available on request.

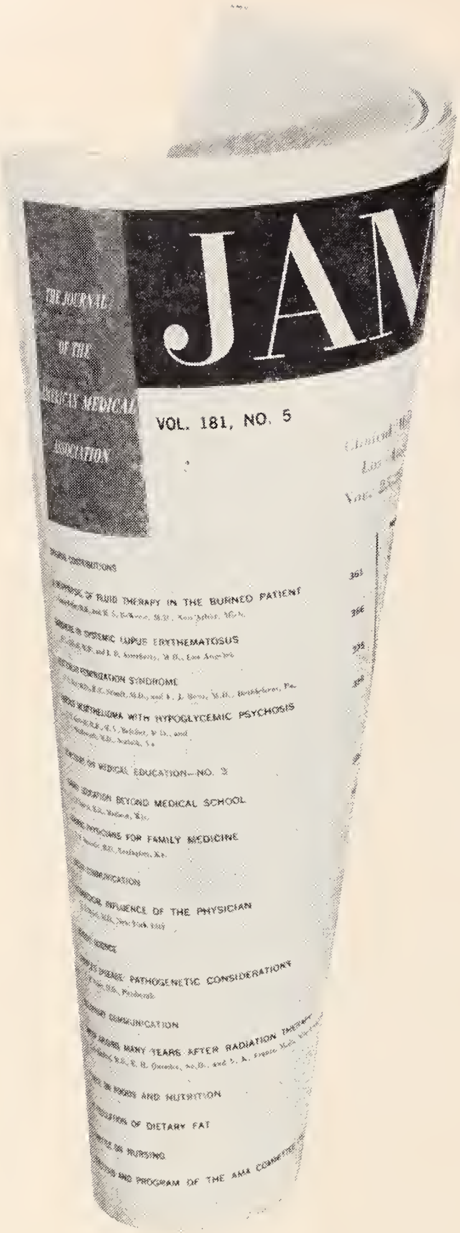
Boutonneuse fever is a tick-borne, acute, febrile disease often affecting children. The bite site becomes a small, necrotic ulcer. A striking macular or maculopapular eruption develops on the trunk, palms and soles. Onset is sudden, with chills, high fever, violent headache and lassitude. The high temperature—up to 103° F.—characteristic of both boutonneuse fever and bronchopneumonia, drops rapidly following initiation of Terramycin therapy.

to bronchopneumonia in Minnesota

BRAND OF OXYTETRACYCLINE

Terramycin® capsules • syrup • pediatric drops
intramuscular solution • intravenous

also available with nystatin as TERRASTATIN® (capsules and oral suspension)


THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
JAM
VOL. 181, NO. 5

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SAFFLOWER OIL
for salads, baking and frying
Freshness preserved with BHA, BHT, propyl gallate, citric acid in propylene glycol.
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Because you are aware of the AMA statement on fat in the diet...

"Increasing the ratio of poly-unsaturated fat to saturated fat in the diet is the preferred method for treating the 'usual' hypercholesteremia."

From the Aug. 4, 1962 issue of The Journal of the American Medical Association.

Of all leading salad and cooking oils Safflower Oil has the highest ratio of poly-unsaturated fat to saturated fat. Safflower Oil is higher in recommended poly-unsaturates—lower in saturated fat than any other readily available oil or shortening.

When an adjustment in dietary ratio of saturated fat is indicated, Saff-o-life

you should be aware of this new, poly-unsaturated oil for cooking

Safflower Oil makes the substitution easy, appetizing, inexpensive.

Physicians who wish recipes using Saff-o-life Safflower Oil are invited to write directly to: Professional Services Director, General Mills, Inc., Department 120, 9200 Wayzata Blvd., Minneapolis 26, Minnesota.

RATIO OF LINOLEATES* TO SATURATES *poly-unsaturated fats

SAFFLOWER OIL	9.0 to 1.0
CORN OIL	5.3 to 1.0
SOYBEAN OIL	3.5 to 1.0
COTTONSEED OIL	2.0 to 1.0
PEANUT OIL	1.6 to 1.0

A product of General Mills—Your assurance of quality and purity.

its potency and efficacy. It is a well-documented fact that a particular drug bearing a specific generic name, but manufactured by two different pharmaceutical manufacturers, can and frequently does have a different potency and efficacy of action.

One example of this is well documented in the case of Prednisone tablets. During the course of the clinical trial, samples of this drug, manufactured by two separate pharmaceutical companies, were compared. Both samples were presumed to have identical potency. But when the patient on Drug A was switched to Drug B, the healing process stopped. When the patient was returned to Drug A the healing process resumed. Yet these two drugs were supposed to be identical in their USP potency.

U. S. Pharmacopoeia

Until the time that I became interested in this problem of generic equivalents, I was under the impression that the United State Pharmacopoeia, the official directory of established drugs, was the official standard to which all drug manufacturers *had* to conform. Much to my surprise, and I am sure to the surprise of many of my colleagues, I now realize that the U. S. Pharmacopoeia is merely a manual of specifications setting forth standards as a guide to drug manufacturers.

Surprisingly enough, it did not contain information as to how the drugs are manufactured or how one insures their quality, purity, or clinical effectiveness. Obviously then the United States Pharmacopoeia serves a purpose *only* when it is complied with. The U. S. Pharmacopoeia has no authority to enforce the standards set forth in its publication, and there is no way to assure the consumer that the product labeled USP so conforms.

In other words, the label of USP that appears on the drug does not assure the physician or his patient that the consumption of this drug measures up to the full standards of the U. S. Pharmacopoeia.

Food and Drug Administration

What recourse then does the physician have to assure him that the drug he is prescribing is of the specified potency that he requires? Perhaps the Food and Drug Administration is the answer here? Again we are disappointed, because by its own admission, the Food and Drug Administration is unable to check every batch of drug produced by all the manufacturers.

Furthermore, the Food and Drug Administration is unable to fulfill all its present obligations under its allotted budget. If the legislation that proposes generic equivalents were to be passed, it would of necessity mean that the Food and Drug Administration must set up extensive and obviously extremely expensive testing laboratories to assure physicians and their patients that there were indeed such things as generic equivalents.

This obviously would mean a tremendous expense to the government, and you and I know this cost would be passed down directly to you and me as individual taxpayers. What is left then to assure the physician that he is prescribing a drug of designated potency, purity and efficacy? The only thing left to him is the honesty, the reliability and integrity of the pharmaceutical manufacturer of the drug.

Now let us look at this problem from a different angle, the angle of the physician who is prescribing the drug. If this proposal of generic terminology should go into effect, it would mean that the physician must learn an entirely new nomenclature. As it is, it is difficult enough for the physician to learn and recall the brand names of drugs. If this is complicated by the necessity of learning a new vocabulary, it becomes virtually impossible and obviously an impractical burden upon the busy physician of today.

Professional Liability

There is yet another danger in the use of generic terminology, and that is in the field of professional liability. As a physician I assume full legal responsibility for the accuracy of my diagnosis and for the efficacy of the treatment that I prescribe. However, in my prescription for a medication under the proposed generic-equivalent provision, I would be turning over to the pharmacist a part of my professional responsibility. It is entirely possible that the drug used to fill my prescription would be one of inferior quality and therefore result in detrimental effects to my patient.

Continued

RELIEVE THE COLD
SUPPRESS THE COUGH
WITH NEW
'EMPRAZIL-C'
TABLETS

ANTITUSSIVE ■ DECONGESTANT ■ ANALGESIC

Each tablet contains:

Codeine Phosphate*	15 mg.
'Sudafed'® brand Pseudoephedrine Hydrochloride	20 mg.
'Perazil'® brand Chlorcyclizine Hydrochloride	15 mg.
Acetophenetidin	150 mg.
Aspirin (Acetylsalicylic Acid)	200 mg.
Caffeine	30 mg.

*Warning—may be habit forming.
Complete literature available on request.

Also available without codeine as
'EMPRAZIL'®
TABLETS

BURROUGHS WELLCOME & CO. (U.S.A.) INC., TUCKAHOE, N.Y.

Remember now that this liability would be shared equally by the physician and the pharmacist; I, as a physician, would be assuming the responsibility for the proper medical care of my patient, and you, as a pharmacist, would be assuming the responsibility for dispensing the medication prescribed. Therefore it becomes all the more important that we doctors not surrender our freedom.

We are obligated at all times to choose the most reliable and most efficacious drug for our patients. The reliable pharmaceutical manufacturers of our country have helped protect you as a pharmacist and me as a physician by self-imposed inspections and control. They have set up rigid standards for the protection of the physician, the pharmacist, and certainly the patient. They have established the reliability and quality of their product, supported by their integrity as manufacturers.

The product manufactured is then in each case given a brand name. As Doctor Louis M. Orr, past president of the American Medical Association stated, this brand name on a product of a manufacturer is comparable to the word "sterling" stamped on silver. It assures the physician that the drug he is prescribing is of uniform quality.

The physician then knows that the medication he has prescribed is of exact potency, has a specific mode of action, will produce a definite result which can be anticipated, and will meet the exact needs of his patients. He knows these facts, because the brand name of the manufacturer is his guarantee for them.

So cognizant of this necessity and reliability is the American Medical Association, that in June of 1961, the AMA House of Delegates passed a resolution that physicians should have the privilege of prescribing drugs by either their generic or their brand name. In November, 1961, this action was again reaffirmed by the House of Delegates.

The American Academy of General Practice likewise adopted a similar resolution.

Conclusions:

Medicine and pharmacy are wedded in a permanent union, a union designed for the advancement of medical care. This advancement has been made possible by our ability to exercise our freedom of choice and our professional judgment.

We are threatened with the curtailment of this inalienable right by unnecessary, costly and dangerous federal legislation, which, if passed, would deprive the physician of much of his professional freedom and expose him, as well as the pharmacist, to the possibility of increased litigation.

It would deprive the ill patient of knowing that the medication he is taking for his illness is the best, purest, dependable medication obtainable.

If this and other proposed legislation to curb the freedom of the physician are put into effect, I predict that the heavy shackles of federal control will be firmly secured on the medical profession. In the end we shall all suffer, if the physician must surrender his freedom of choice and professional judgment.

The Lord hath created medicines out of the earth; and he that is wise will not abhor them.—Aprocrypha: Ecclesiasticus

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They only earn their freedom and existence who daily conquer them anew.—Goethe

sedative-
enhanced
analgesia

for more satisfactory relief of anxiety-aggravated pain

PHENAPHEN®

- More satisfactory than "the usual analgesic compounds" for relieving pain and anxiety.[1]
- More effective than a standard A.P.C. preparation for relief of moderate to severe pain.[2]

Each PHENAPHEN *capsule contains:*

Acetylsalicylic acid (2½ gr.)	162 mg.
Phenacetin (3 gr.)	194 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine sulfate	0.031 mg.

Also available:

PHENAPHEN with CODEINE PHOSPHATE ¼ GR. (16.2 mg.) Phenaphen No. 2

PHENAPHEN with CODEINE PHOSPHATE ½ GR. (32.4 mg.) Phenaphen No. 3

PHENAPHEN with CODEINE PHOSPHATE 1 GR. (64.8 mg.) Phenaphen No. 4

Bottles of 100 and 500 capsules.

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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA
Making today's medicines with integrity... seeking tomorrow's with persistence.

Physician's Guide to Wills, Trusts, and Estates

Almost every physician intends to make a will before he dies. Yet, it is a common occurrence for physicians to die without a will. Perhaps this neglect is due to inertia or an aversion to deal with matters which contemplates one's own demise. Ironically, this procrastination is shared with members of the legal profession. Lawyers who have spent a lifetime drawing wills for their clients often die without having drawn their own will.

This guide can help you to minimize the taxes that may be due at your death and to understand the important aspects of a will so that you can plan more wisely for your family's future security.

BERNARD D. HIRSH
Chicago, Illinois

PART II

FORMAL REQUIREMENTS OF A VALID WILL

THE REQUISITES of a valid will are subject to some variation among the states, but the laws of all states contain a number of the same fundamental requirements. A will must be in writing. As has already been pointed out, an *oral* (nuncupative) will is recognized in some states, but merely for the purpose of distributing a limited amount of personal property. Such wills are usually acceptable in circumstances where the testator is close to death, and to soldiers and sailors in battle or mariners at sea.

A will may be handwritten in ink or lead pencil, typed, or printed. It must be signed and, in some states, the testator's signature must be acknowledged in the presence of at least 2 witnesses, although some states require 3 witnesses. The witnesses must then sign in the presence of the testator and of each other.

A few states do not require *holographic* wills, that is, wills that are entirely in the handwriting of the testator, to be attested by witnesses. The basis for the exception is that a naive person might sign a paper placed before him for signature without reading it or realizing that it is a will; however, anyone who has written out his will in longhand is obviously aware of what he has signed.

Persons under the ages prescribed by state laws cannot make a valid will. The laws of descent govern the distribution of the property of such minor persons at death. Table 1 below shows minimum age requirements for leaving real estate or personal property by will, the number of necessary witnesses, and the states which recognize the validity of a will in the handwriting of the maker (holographic will) without attesting witnesses.

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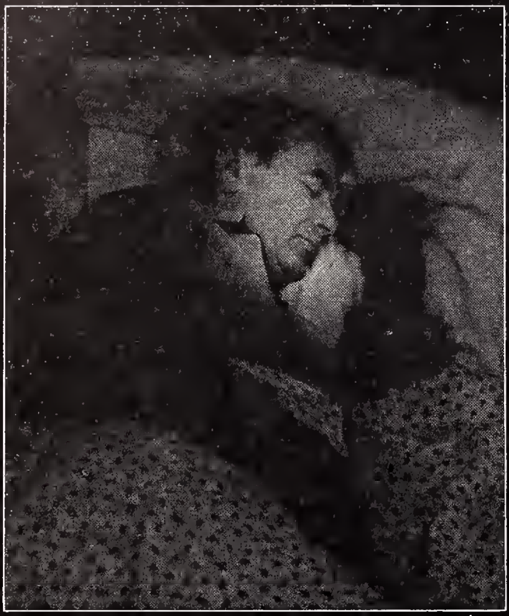
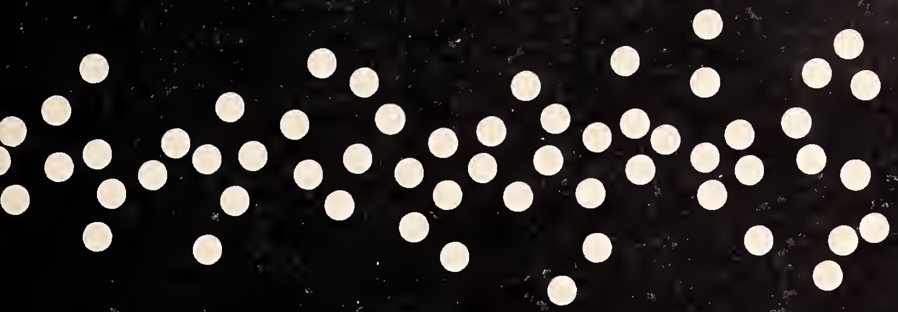
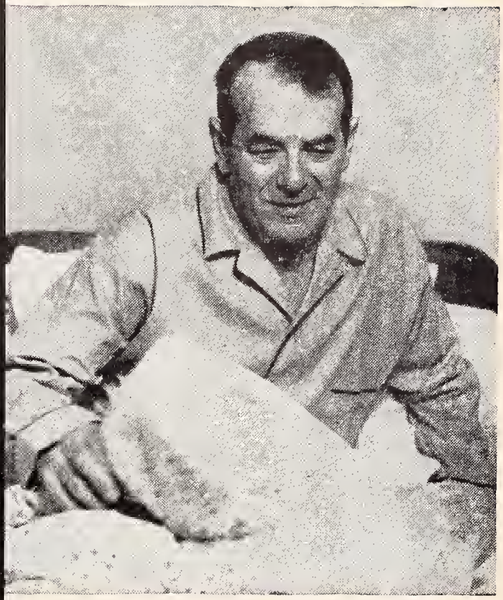


Thanks to 135 tiny "doses" throughout th

*Trademark, Reg. U.S. Pat.Off.   Copyright 1962, The Upjohn Company





ght, the arthritic wakes up comfortable

Morning stiffness may be reduced or even eliminated as a result of therapy with the only steroid in long-acting form. And the slow, steady release of steroid makes it possible in some cases to reduce the frequency of administration and/or the total daily steroid dosage.

Medrol* Medules*

Each hard-filled capsule contains Medrol (methylprednisolone) 4 mg. Also available in 2 mg. soft elastic capsules.

Supplied in bottles of 30 and 100.

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Please see package insert for
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The Upjohn Company, Kalamazoo, Michigan

SPECIAL COUGH FORMULA
for Children

Pediacof®

SOOTHING DECONGESTANT AND EXPECTORANT

Each teaspoon (5 ml.) contains:		
Codeine phosphate	5.0	mg.
Neo-Synephrine® hydrochloride (brand of phenylephrine hydrochloride)	2.5	mg.
Chlorpheniramine maleate	0.75	mg.
Potassium iodide	75.0	mg.

Bright red, pleasant tasting, raspberry flavored syrup

Dosage:

Children from 6 months to 1 year, 1/4 teaspoon; 1 to 3 years, 1/2 to 1 teaspoon; 3 to 6 years, 1 to 2 teaspoons; 6 to 12 years, 2 teaspoons. Every four to six hours as needed.

How Supplied:
Bottles of 16 fl. oz.

Available on
prescription only.

Exempt Narcotic

Winthrop
LABORATORIES
New York 18, N Y

Table I.—Some Formal Requirements of a Valid Will

State or Territory	Legal Age for Real Estate		Legal Age for Personal Property		Minimum Number of Witnesses	Holographic Wills Recognized
	M	F	M	F		
California	18	18	18	18	2	Yes
Illinois	18	18	18	18	2	No
Iowa	21	21	21	21	2	No
Michigan	21	21	21	21	2	No
Minnesota	21	21	21	21	2	No
Montana	18	18	18	18	2	Yes
North Dakota	18	18	18	18	2	Yes
South Dakota	18	18	18	18	2	Yes
Wisconsin	21	21§	21	21§	2	No

---

§ Or a married woman over 18.

If after making your will you later decide to change some of the provisions, you may do so by making a codicil instead of rewriting the entire will. A codicil must be executed and witnessed with the same formalities as an original will. A codicil is considered to be a supplement to the original will, and both together are treated as a single instrument.

A will should be reviewed by the testator at least once a year and with the assistance of an attorney whenever there has been a change in the circumstances of the testator. If you want to change your will and it is a short one, ordinarily a new will should be drawn. However, if the will is long and complicated and only a minor change is desired, a codicil may be sufficient.

Revoking a Will

You may revoke your will at any time by destroying it. If you die before making a new will, your property will be distributed according to the laws of descent of your state.

To revoke a will is to nullify it. A will may be expressly revoked by a revocation clause contained in a later will or sometimes by a change in the circumstances of the testator after the execution of the will which may constitute a revocation by operation of law. Generally, less formality is necessary to revoke than to make a will. A will may be revoked by its intentional obliteration, tearing, or destruction. A revoked will is as inoperative as if it had never been written.

Implied Revocation

Revocation by operation of law is based upon the doctrine that a revocation of the will is to be implied from certain changes in the family relations of the testator. The theory is that these changes have created new moral obligations for the testator and presume his intent to change the disposition of his property to conform to the new family relationships. The doctrine of revocation by operation of law is not fully recognized in all states.

A number of court decisions hold that a will is revoked by the death of the sole beneficiary or all beneficiaries during the life of the testator. On the other hand, a change in sentiment or feeling on the part of the testator will not operate to revoke a will. The validity of a will was upheld in the case of a testator who disinherited his 2 daughters at the time he made his will because he was displeased with their marriages even though there was a subsequent family reconciliation.

Many states have a general statutory rule by which a will that does not provide for the occurrence of a subsequent marriage is revoked. However, a divorce does not revoke a devise or bequest in favor of one of the parties contained in a will previously executed by the other.

Under the common law rule which governs in most states, an increase or decrease in the size of the estate or its relative value does not operate to revoke a will.

The common law rule which prevails in most states is that the birth of a child does not revoke the will of the father where the will was executed after his marriage. Many states have provided by statute that where the testator has a child born after the making of his will, the birth operates as a revocation of the will, thereby allowing the child to share in the testator's estate, unless the child is provided for by the will, or it appears that it was the intention of the testator to disinherit the child. Other jurisdictions have statutes which do not revoke the will but provide that the child of the testator shall share in the estate as though the testator had died intestate.

Changes in the tax laws, family relationships, and business conditions make advisable a periodic review of your will with your attorney, and possibly the execution of a new one.

Your Executor

Before naming anyone as executor of your will, you should ascertain in advance whether he is willing to serve in this capacity. If you appoint a bank or your attorney, your executor can also be the custodian of your will, but if another person is selected, you should inform him of its location.

Continued

what your patients need to know about Aspirin

As you know, the confidence your patients place in a certain treatment or drug often helps to reinforce the relief they get from it. That's why it's often a good idea to explain the reasons for your recommendations, even in the simplest cases.

For example, aspirin. You probably recommend it more than any other drug, as an analgesic, as an antipyretic, as an aid to sleep when restlessness is caused by minor discomforts. Certainly aspirin is the most versatile and one of the most effective drugs in the arsenal of medicine.

But aspirin is such a common and such a safe drug that most laymen vastly underrate it. To use it with the utmost confidence, they need to know more about it. So next time, take a minute or two to explain what a uniquely valuable drug aspirin really is. You know it; your patients will be reassured to know it, too.

5-grain tablets

BAYER
ASPIRIN
FAST PAIN RELIEF
BAYER
Genuine

1¼-grain tablets

ORANGE FLAVORED
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50 TABLETS
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How do the lemons get in the Vi-Daylin?
NO REFRIGERATION NEEDED
tastes like lemon candy!
VI-DAYLIN®
Homogenized Mixture of Vitamins A, D, B₁, B₂, B₆, B₁₂, C and Nicotinamide, Abbott
All the vitamins your child normally needs
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Perhaps this should be cleared up once and for all. There are *no* lemons in Vi-Daylin. If you've ever tasted Vi-Daylin, this might surprise you. Certainly, it would surprise the youngsters. To most of them, Vi-Daylin is liquid lemon candy, and that's *that*. But if it's deception, it's sensible deception. You never have to badger the kids into taking their vitamins. Nice to know, too, that this matchless matching of candy essence and color elegance can be found in all the forms and formulas of Vi-Daylin.

VI-DAYLIN—Vitamins A, D, B_1, B_2, B_6, B_{12}, C, and Nicotinamide, Abbott; VIDAYLIN-M—Homogenized Mixture of Vitamins with Minerals, Abbott; VI-DAYLIN-T—High Potency Multivitamins, Abbott.

Remember, there are *three* liquid formulas: Vi-Daylin, ViDaylin-M® (with minerals), and ViDaylin-T® (therapeutic). And if patients get a little owlly and won't touch *anything* in a spoon, you can give them the new Chewable (please see back of this page).

Each delicious, 5-cc. teaspoonful of Vi-Daylin supplies the following proportions of the Minimum Daily Requirements of:

		MDR (Children)	MDR (Infants)
Vitamin A	0.9 mg. (3000 units)	1	2
Vitamin D	10 mcg. (400 units)	1	1
Thiamine HCl (B_1)	1.5 mg.	2	6
Riboflavin (B_2)	1.2 mg.	1⅓	2
Ascorbic Acid (C)	50 mg.	2½	5
Nicotinamide	10 mg.	1⅓	2

Also supplies cyanocobalamin (B_{12}) 3 mcg. and pyridoxine Hydrochloride 1 mg.

209035A

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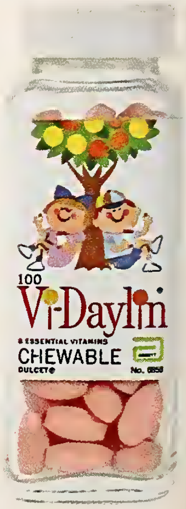
Gentlemen,

My family enjoys your chewable vitimans. It seems like we can not get enough of your vitimans. My sister enjoys your vitimans so much that she ask for more but cannot have no more. I like them because my mother does not have to worry about scolding us when taking it. Its good because you don't have no worries about something falling on the floor. If you kept on making these vitimans all the worlds children would be happy again. Now I would like to know whether I may have any information on the Middle West. You see my class and I are studying it. So if the information can be given I thank you very much.

"...all the worlds children would be happy again."

(an unsolicited testimonial from an actual letter)



ABBOTT

Wife as Executrix

Under ordinary circumstances, if your estate is of moderate size and uncomplicated, and your primary beneficiary is your wife, you should have no hesitancy about naming your wife as executrix. However, if your estate is substantial in size, the appointment of a trust company as co-executor is a wise precaution. The probating of an estate requires the services of an attorney regardless of whether an individual or an institution is named executor. Generally, the attorney who prepared your will or the family attorney at the time of your death will be called upon to probate your will. He will prepare the necessary documents from information supplied by your executor and assist in gathering such information.

Attorney as Executor

The fees which the attorney for the estate and the executor may charge the estate are governed by statute and are subject to approval of the probate court. An attorney who serves both as executor and attorney for the estate is ordinarily permitted by the court to charge higher fees commensurate with his dual responsibilities. If your wife is the executrix, the attorney may, as a practical matter, be performing substantially the same work, but he will not be entitled to an executor's fees. (See Table 2.)

Table 2.—Typical Fees Charged by Trust Companies for Acting as Executor or Administrator of Will

Estate Size	Approximate Rates, %
Under $25,000	5
$ 25,000 to 50,000	4 to 3½
50,000 to 100,000	3½ to 3
100,000 to 250,000	3 to 2½
250,000 to 1,000,000	2½ to 2
1,000,000 and up	2 to 1½

Trust Company as Executor

The lawyer's task is usually easier if a bank or trust company is the executor instead of an individual. Banks are staffed to perform the duties of executorship and routinely perform all the tasks required in connection with your estate with the exception of those that legally may be performed only by an attorney, such as court appearances.

Probate Proceedings

After the death of the testator, his will is filed for *probate* in a court known as a *probate, surrogate's,* or *orphans'* court. A primary function of this court is to supervise the estate of deceased

Duties of Executor

The primary duties of an executor are to:

(1) Offer the will for probate and obtain approval of the probate court to act as executor.

(2) Take control of all personal property in the estate including the contents of safe-deposit boxes.

(3) Keep books and records of all estate transactions.

(4) Collect debts due to the decedent.

(5) Collect life insurance payable to the estate.

(6) Arrange for the transfer of stocks, bonds and other securities from the decedent's name to that of the executor.

(7) Defend the estate against litigation brought against the estate or which may have been pending against the decedent at the time of his death.

(8) Initiate litigation, if necessary, to collect claims of the decedent or the estate.

(9) Arrange for appraisal of real estate and personal property for tax purposes.

(10) Pay taxes, debts of the decedent, and expenses of administering the estate.

(11) Make arrangements for distribution of assets and payment of bequests to beneficiaries named in the will.

(12) Prepare and file final accounting with the probate court for closing the estate.

Continued

Why did 1,094 doctors order PRESTO Air Humidifiers last winter?

In December, 1961, a professional discount on the purchase of Presto Humidifiers was offered to physicians.* In addition to the obvious savings involved, there are these significant facts: **1.** Presto effectively adds needed moisture to dry, heated air. Discomforts of nose and throat due to below normal humidity are reduced. **2.** The unit is readily portable (stand optional at extra cost), plugs into any 115v A.C. outlet. Operation is simple, quiet, trouble-free. **3.** Tank (5-gal. capacity), cabinet and grill are rustproof; cabinetmaker styling harmonizes with home or office furnishings. **4.** New on Presto's 1962 model Humidifiers—a Humidistat Control maintains desired humidity setting automatically. Presto Air Humidifiers are available for patient use through retail outlets everywhere.

Special Discount to Physicians!

Presto Mark IV Humidifier (list $69.95) only $46.63. Stand, $5.30 additional. Mail coupon with check directly to...

Dept. SJ-1, National Presto Industries, Eau Claire, Wis.

NAME____________________

ADDRESS____________________

CITY____________________

STATE____________________

PRESTO
PRESTO®
ADDS NEEDED MOISTURE TO DRY, HEATED AIR!

---

*In response to the above offer, 1,094 physicians ordered Presto Humidifiers for their own use.

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persons. In the probate proceedings, the witnesses will be called upon to testify that they witnessed the will. If the court is satisfied with the proof that the will was properly executed, it will be declared to be valid and admitted to probate. Probating a will is usually a routine matter, except where the validity of a will may be contested by disinherited heirs. In such cases, the ensuing litigation may be long and expensive.

The executor (executrix, if a woman) named by the testator, then carries out the provisions of the will by (1) gathering together the property of the testator, (2) paying his debts, including inheritance and estate taxes, (3) advertising for claims against the estate, and (4) distributing the personal property that remains to the persons who are to receive it under the will.

Generally, the executor has no authority over the real estate belonging to the testator unless the real estate is needed to pay off the debts of the testator. Title to real estate passes directly to the devisees named in the will.

Where a testator fails to name an executor in his will, or the executor named is for some reason unable to serve, the probate court will appoint an *administrator* to carry out the provisions of the will. To avoid the possibility that a stranger may be appointed to administer your estate, it is best to name alternate executors in your will.

Unless the will excuses the executor from posting a bond for the faithful performance of his duties, the probate court will require a bond. If the executor is a bank or trust company, a bond is an unnecessary expense and the same is generally true where the spouse is named as executor.

Typical Form of Will

The following is a discussion of a simple will. In order to help you to understand the mechanics of making a will, typical clauses are separately explained.

Opening Clause

The opening clause of your will, according to custom, should recite your full name, your place of residence, and identify the document as your last will. Your acknowledged place of residence will be of importance in determining which state laws should be applied in determining the validity of your will. Usually, your will should begin in this way:

> I, Hugo Gorman, a resident of Chicago, Illinois, do hereby make, publish and declare this to be my Last Will and Testament.

Cancelling Previous Will

If you have previously made a will, it is advisable that it be specifically cancelled. In order to avoid questions as to the possible validity of a previous will, the following clause is generally included even if you have never before had a will.

> I revoke all wills heretofore made and executed by me.

Specific Bequests

If you have a particular piece of property which you wish to leave to someone, this is known as a "specific bequest." This may be phrased as follows:

> I bequeath to my son, Felix Gorman, my entire gun collection.
>
> I devise to my son, Roy Gorman, the vacant lot located at 810 E. Randolph Street, Westchester, Illinois.

General Bequests

A general bequest is one which is paid to a beneficiary out of the general assets of your estate. Ordinarily, a general bequest consists of cash. To provide for the possibility that your estate may shrink in value between the time you make your will and your death, some limitations may be placed on bequests to friends and charities as in the following:

> I bequeath to my friend, Henry Galt, of Decatur, Illinois, the sum of Five Thousand ($5,000) Dollars.
>
> I bequeath to the American Medical Association Education and Research Foundation, of Chicago, Illinois, the sum of Three Thousand ($3,000) Dollars.
>
> Anything contained in this will to the contrary notwithstanding, should the total of my bequests to friends and charities exceed fifteen (15%) percent of the gross value of my estate, then in that event, I direct that all such bequests be abated proportionately, so that altogether they shall not exceed fifteen (15%) percent of the gross value of my estate.

Remainder Clause

Following your specific and general bequests, you will want to provide for the disposition of the remainder of your estate, including overlooked or after-acquired property. This may be done in this way:

> All of the remainder of my estate, of whatsoever nature and wherever situated, I give, devise and bequeath to my wife, Ethel Gorman.

Continued

For peptic ulcer gastric hyperacidity and gastritis...

In year-long study on peptic-ulcer patients

New Creamalin® Antacid Tablets

*"...faster in onset of action...and for a longer period"**

"Clinical studies in 85 patients with duodenal ulcer ...confirmed the superiority of the new preparation [new Creamalin] over standard aluminum hydroxide preparations, in that prompt relief was achieved and maintained throughout the period of observation."*

Patients were followed for about one year.

New Creamalin promotes ulcer healing, permits less frequent feedings because it is so long-acting. Heartburn and epigastric distress were "...easily and adequately controlled...."* New Creamalin has the therapeutic advantage of a liquid antacid with the convenience of a palatable tablet. *It does not cause constipation.*

Each new Creamalin tablet contains 320 mg. of specially processed highly reactive dried aluminum gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles offer a vastly increased surface area.

Dosage: Gastric hyperacidity—from 2 to 4 tablets as needed. Peptic ulcer or gastritis—from 2 to 4 tablets every two to four hours. *How Supplied:* Bottles of 50, 100, 200 and 1000.

Now also available—New Creamalin Improved Formula Liquid. Pleasant mint flavor—creamy pink color. Stabilized reactive aluminum and magnesium hydroxide gel (1 teaspoon equals 1 tablet). Bottles of 8 and 16 fl. oz.

Creamalin, trademark reg. U.S. Pat. Off.

*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

Winthrop
LABORATORIES
New York 18, N. Y

Executor

Often, a physician will find it expedient to nominate his wife to be his executrix. The various documents necessary in probating the estate will be prepared by the attorney for the estate and the duties of the doctor's wife as executrix will involve in the main business decisions regarding the sale of assets. If your estate is large or complex, you may want to name a bank as co-executor.

As a general precaution, it is wise to name a substitute executor in the event that your first choice should die or be unable to serve for some reason. This may not be necessary if a bank or trust company is named as executor or co-executor.

Another item to be considered is the matter of the executor's bond. If the executor is the principal beneficiary, or your wife, a close friend, or a bank, you may wish to save the expense of the executor's bond by providing in your will that the executor may serve without bond.

The following are typical paragraphs dealing with the appointment of an executor:

> I nominate and appoint my wife, Ethel Gorman, to act as my Executrix. In the event that she should pre-decease me, or should refuse or be unable to act as my Executrix for any reason whatsoever, I nominate and appoint my brother, Burton Gorman, of Glencoe, Illinois, as my Executor. I further direct that my Executrix or Executor shall not be required to post any bond for the faithful performance of duties.
>
> *or*
>
> I nominate and appoint my wife, Ethel Gorman, and the Community Bank, of Chicago, Illinois, to be the co-Executors of this, my last will and testament, and I further direct that neither shall be required to post any bond for the faithful performance of duties.

Testimonium Clause

The conclusion of your will is referred to in legal jargon as the *testimonium* clause. It merely recites the date of the execution of your will in the following manner:

> IN WITNESS WHEREOF, I have herunto set my hand and seal this 14th day of Februry, 1962.
>
> *Hugo Gorman* (SEAL)

In addition to signing your will at the end, a cautious attorney will have you initial or sign each page in order to avoid later question as to the possible substitution of pages.

Attestation

Attestation consists of the execution or the signing of your will in the presence of witnesses. Most states, as shown in Table 1, require only 2 witnesses, but some states require 3 witnesses. As a matter of general precaution, it is best to have 3 witnesses, particularly if there is the possibility that you may move to a jurisdiction that requires 3 witnesses to the execution of a will or in the event that you may provide for the disposition of property located in such a state. It is not necessary for the witnesses to read your will before affixing their signatures. It is only necessary for them to know that it is your will.

Your witnesses should be of legal age, and preferably younger than you and persons who are likely to be available when needed to prove your will. The fact that a witness may have moved away or may have predeceased you does not prevent the establishment of the validity of a will, but it does complicate the matter of proof.

A beneficiary under your will should not be permitted to serve as a necessary witness. If he does, the most that he will be allowed to receive is what he would have received if there had been no will. A relative or executor who is not a beneficiary may serve as a witness.

The attestation clause should recite the circumstances under which the will was witnessed. Although there are minor differences among the states as to the formalities to be observed in the execution and witnessing of wills, the following clause meets the requirements of the various state laws.

> Signed, sealed, published and declared to be the last will and testament of Hugo Gorman, the testator above named, in our presence, and at his request, and in the presence of each other, have hereunto subscribed our names as witnesses this 14th day of February, 1962.

Name	Address
George Ray	*329 Craig Ave., La Grange, Ill.*
Felix Gordon	*14 East Drive, Chicago, Ill.*
Alice Kix	*42 Tower Road, Glencoe, Ill.*

Form of Codicil

A codicil is a supplementary instrument which is used to make changes in a will. It must be witnessed and executed with the same formality as a will. This is an example of a codicil:

Continued

in arthritis: vitamins are therapy

In dealing with the chronic stress of arthritis the physician often faces the problem of nutritional imbalance. High potency B and C supplementation is needed for rapid replenishment of tissue stores of these water-soluble vitamins. STRESSCAPS meet this need and help support the natural metabolic defenses in the disease. Supplied in decorative "reminder" jars of 30 and 100.

Each capsule contains:	
Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

STRESSCAPS®

Stress Formula Vitamins Lederle

I, Hugo Gorman, of Chicago, Illinois, do hereby make, publish and declare this codicil to be my last will and testament.

I ratify my will executed the 14th day of February, 1962, except insofar as it is inconsistent with the terms of this instrument.

I bequeath to my friend, Henry Galt, of Decatur, Illinois, the sum of Ten Thousand ($10,000) Dollars instead of Five Thousand ($5,000) Dollars.

I cancel the bequest of my gun collection to my son, Felix Gorman, and give it instead to my nephew, Peter Barton, of Detroit, Michigan.

In witness whereof, I have hereunto set my hand and seal this 10th day of March, 1962.

Hugo Gorman (SEAL)

Signed, sealed, published and declared to be a codicil to the last will and testament of Hugo Gorman, the testator above named, in our presence, and at his request, and in the presence of each other, have hereunto subscribed our names as witnesses this 10th day of March, 1962.

Name	Address
Ralph Adams	*18 East Oak St., Chicago, Ill.*
Ben Jones	*114 Elm St., Chicago, Ill.*
Rose Smith	*2042 West Ave., Skokie, Ill.*

Safekeeping of Your Will

Your will should be kept in a safe place where it will not be accidentally lost or destroyed and where it is easily available. If you name a bank or trust company as your executor or co-executor, such institutions will generally keep your will in their vaults without charge. You will be given a receipt for your will and you may withdraw it at any time if you later decide to make a new will. In many jurisdictions, for a nominal fee, you may file your will in the probate court or the county recorder's office, subject to your withdrawal at any time.

Lawyers often will keep their clients' wills in their vaults. In the case of a large, well-established law firm this is satisfactory, but if the attorney is an individual practitioner, there is the possibility that he may die or move away and that your will may then be difficult to locate.

Many people find it convenient to keep their wills in a safe-deposit box, but this may involve a

Continued

* * *

WILL OF JOHN DOCTOR

I, JOHN DOCTOR, of Chicago, Illinois, declare this to be my last will, and revoke all other wills that I may have made.

1. I bequeath the sum of Five Thousand Dollars ($5,000) to my sister, MARY DOCTOR.

2. I bequeath the sum of One Thousand Dollars ($1,000) to the AMERICAN MEDICAL ASSOCIATION EDUCATION AND RESEARCH FOUNDATION.

3. I devise and bequeath the remainder of my estate, wherever situated, as follows: (a) One-half to my wife, JANE DOCTOR, if she survives me for sixty days, and (b) the balance, or the whole if my wife does not survive me for sixty days, in equal shares, to my children who survive me for sixty days.

4. I appoint my brother, GEORGE DOCTOR, but if he shall fail or cease for any reason to act, my brother-in-law, RUSSEL ROE, to be executor of this will. My executor shall be exempt from giving any bond or other security.

5. My executor shall have the power to sell or retain under such conditions as he deems advisable, all the property in my estate, and to pay and compromise claims against my estate, and to pay and compromise claims held by my estate. He shall have power to do all things necessary to continue my medical practice, in whatever form, and for such period as he deems fit.

6. I appoint my brother, GEORGE DOCTOR, but if he shall fail or cease for any reason to act, my brother-in-law, RUSSEL ROE, as guardian of the person and of the estate of any minor child of mine during his minority, if my wife does not survive me, or if she dies after my death without having made provision for the custody of any child of ours, or for the management of his estate. Such guardian shall be exempt from giving any bond or other security.

I have signed this will on this 15th day of May, 1962.

John Doctor

The foregoing instrument was signed and declared by JOHN DOCTOR to be his last will in the presence of the undersigned. We believed him to be of sound mind and memory and not under duress or constraint of any kind. At his request and in his presence and in the presence of each other we then signed our names as attesting witnesses. All of which was done on the date last above written in said instrument.

NAME	ADDRESS
Thomas Jackson	*331 Elm St., Chicago, Ill.*
Ralph Bates	*8462 Parkway Rd., Chicago, Ill.*
Stanley Stan	*4919 Bryan Ct., Evanston, Ill.*

Stelazine® will stop anxiety—but not your patient!
brand of trifluoperazine

To be truly useful in your office patients, an ataractic agent must not only relieve anxiety; it must also leave these patients sufficiently alert to engage in their normal activities.

'Stelazine' is such an agent. Its ability to relieve anxiety without producing appreciable sedation has been established in thousands of patients and documented by many published reports. Typical is the finding of Kolodny,[1] who concluded that the primary advantage of 'Stelazine' over many other tranquilizers seems to be "its ability to relieve symptoms of anxiety without undue interference with alertness."

When you wish to relieve anxiety, yet encourage the patient to engage in his normal activities, consider 'Stelazine'.

1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

For prescribing information, please see *PDR* or available literature.

Smith Kline & French Laboratories, Philadelphia
leaders in psychopharmaceutical research

SK&F

complication. A safe-deposit box held in your name individually or jointly will be sealed upon your death pending examination by the taxing authorities. Until such examination, this means that there may be a delay before your family will have access to your will. For this reason, a husband will sometimes keep his will and similar papers in a safe-deposit box which his wife holds in her individual name (not jointly) but to which he has access as a "deputy." By signing an appropriate form, the holder of a safe-deposit box can authorize access to one or more deputies to his or her box. However, the holder of the box may withdraw this authorization at any time.

It is a good practice to retain an unsigned carbon copy of your will at some place other than where the original is kept. Duplicate originals should not be executed. This can create a problem if one of the originals is misplaced and the testator later decides to destroy his will and make a new one.

Letter of Last Instructions

A physician should not consider his affairs to be in good order until he has prepared what is commonly referred to as a letter of last instructions. A physician's letter of last instructions should include information which will aid his executor and wife in the administration of his estate and winding up his affairs. This document should not be confused with a will. It cannot provide for the testamentary disposition of property, since this can only be accomplished by a properly executed will.

The letter should include the location of the following and similar items:

(1) Your will.
(2) Safe-deposit boxes and their keys.
(3) List of bank accounts and bank books.
(4) Life insurance, professional liability, and other policies.
(5) Records that identify separate and community property (in states under the community property system).
(6) Stocks, bonds, and other securities.
(7) Copies of income tax returns.
(8) Cancelled checks and receipts.
(9) Certificates of title to automobiles.
(10) Employment or partnership agreements.
(11) Personal books of account.
(12) Business records pertaining to your practice.
(13) Deeds, mortgages, and similar documents relating to property.
(14) Records relating to any trust in which you are a beneficiary.
(15) Social security card and records relating to OASI benefits.
(16) Any papers which show that you are entitled to participate in a government or other pension plan, or disability benefits resulting from military service.
(17) Birth and baptismal certificates, military discharge papers, etc.

Professional Advisors

In addition to the foregoing, you should include in your letter of last instructions the names and addresses of the persons whom you have customarily relied upon for counsel with respect to your personal and professional business affairs. This will include, for example, your accountant, life insurance underwriter, insurance broker, stock broker, your executor, and the attorneys who have represented you in business affairs and whom you desire to handle the probating of your estate.

Your Medical Practice

Of especial interest to your executor and the attorney who will probate your estate is the need for advice on how to dispose of your practice. If it is your intention that the good will that you have created in building a medical practice should be sold, the sale must be accomplished as soon as possible after your death. Otherwise, whatever value that it may have will rapidly disappear. Therefore, if you believe that your practice may be saleable after your death and it is your wish that it be sold, your letter of last instructions should include information as to how a prospective purchaser may be contacted. You may name fellow practitioners in your community who might be helpful in procuring a buyer, or you may provide information regarding advertisements to be placed in medical journals, etc.

Under ordinary circumstances, because of the personal nature of a physician's practice, its sale upon his death may not be feasible, practical, or worth the effort of attempting to obtain a buyer. Whether or not the practice is sold, the physician will want to leave instructions regarding the retention and ultimate disposition to be made of his medical records. If possible the medical records of a physician should be retained following his death by a fellow practitioner. At the request of the latter, his medical record should be made available to his new physician.

(To BE CONTINUED NEXT MONTH.)

WITH YOUR ENCOURAGEMENT

AND

DEXEDRINE®

brand of dextro amphetamine

SPANSULE®

brand of sustained release capsules

she's losing weight

'Dexedrine' *Spansule* capsules not only control appetite all day long, but at the same time encourage normal activity. This is particularly important because overweight patients are often inactive. In such patients 'Dexedrine' overcomes lethargy, helps renew their interest in doing things—not just eating.

PRESCRIBING INFORMATION

INDICATIONS AND DOSAGE: For the following indications, the recommended daily dosage is one or two 'Dexedrine' *Spansule* capsules, usually taken in the morning: control of appetite in weight reduction; depressive states; alcoholism. In narcolepsy, the recommended daily dosage is up to 50 mg. of 'Dexedrine' by 'Spansule' capsule on arising.

SIDE EFFECTS: Insomnia, excitability and increased motor activity are infrequent and ordinarily mild.

CAUTIONS: Should be used with caution in patients hypersensitive to sympathomimetic compounds; in cases of coronary or cardiovascular disease; and in the presence of severe hypertension.

CONTRAINDICATIONS: Hyperexcitability; agitated pre-psychotic states.

SUPPLIED: 5 mg., 10 mg. and 15 mg., in bottles of 30. (Each capsule contains dextro amphetamine sulfate, 5 mg., 10 mg., or 15 mg.)

Prescribing information adopted January 1961.

Smith Kline & French SK&F *Laboratories*

Abstracts and Briefs

OOPHORECTOMY FOR BREAST CANCER

The authors review twenty years experience with prophylactic oophorectomy for breast cancer, performed as an adjunct to standard radical mastectomy. The series includes 72 cases of adenocarcinoma of the female breast in premenopausal and menopausal women in the years 1937 through 1956, and thus allows a minimum follow up of 5 years. There was a ninety-four per cent follow up possible. Three of the 68 patients followed had x-ray sterilization, the others all having surgical excision of the ovaries. There were no surgical deaths. Seventeen patients received supplemental x-ray therapy.

At five years ninety-one percent of patients without demonstrated nodal metastases were living, and fifty percent of those with positive nodes survived. At ten years the patients with negative nodes had a sixty-seven per cent survival, and those with positive nodes had dropped to thirty per cent.

There is no specific control group for comparison. The authors have a group of 182 patients who were postmenopausal, who were treated by radical mastectomy without castration. The survival rates in this group were considerably lower. In the absence of node metastases the survival was 77% at five years and 46% at ten years. With positive nodes there were 41% survivals at five years and 21% at ten years.

The authors review other data from the medical literature supporting the concept of hormonal relationships in breast cancer, and conclude that bilateral oophorectomy is a beneficial adjunct to radical mastectomy in the treatment of operable adenocarcinoma of the breast in premenopausal and menopausal women.

Various authorities have recognized the need for cooperative, controlled, long-term studies of the various controversial points of management of breast cancer. Obviously accumulation of such data will be a matter of decades hence. Until then the clinician will have to apply his evaluation of information from series such as that summarized above individually and selectively to his breast cancer patients.

Robert N. Hammerstrom, M. D.,
Minneapolis, Minnesota

"Twenty Years' Experience with Prophylactic Bilateral Oophorectomy in the Treatment of Carcinoma of the Breast" Horsley, J. S. III, Horsley, G. W., Am Surg 155:935, June, 1962.

INCIDENCE OF NEVI

At present there are two views regarding the treatment of pigmented nevi present on the palms, soles and genitalia. One group feels that pigmented nevi on these locations should be prophylactically removed to avoid development into malignant melanomas while a second group believes that this is not practicable. In a study related to this problem the author examined 10,000 males, 17 to 25 years of age. They were scrutinized for pigmented nevi on their palms, soles, and genitalia. Only easily recognizable lesions were included in the study. Examination revealed pigmented nevi present in these sites in 14.9% of the persons examined.

The author came to no conclusion concerning the advisability of removing such lesions but the editorial comment is of significance. It is his opinion that, because these nevi are so common, their routine removal would be grossly impractical; especially so since it is not at all certain that most melanomas arise from ordinary nevi. He also feels that those who suggest prophylactic removal of these lesions will have to decide if the incidence of melanoma, which has been found at 0.0018% in the general population, justifies surgical treatment of some 15% of all young persons.

An important and interesting study well worth reading.

A. S. Zelickson, M. D.
Minneapolis, Minnesota

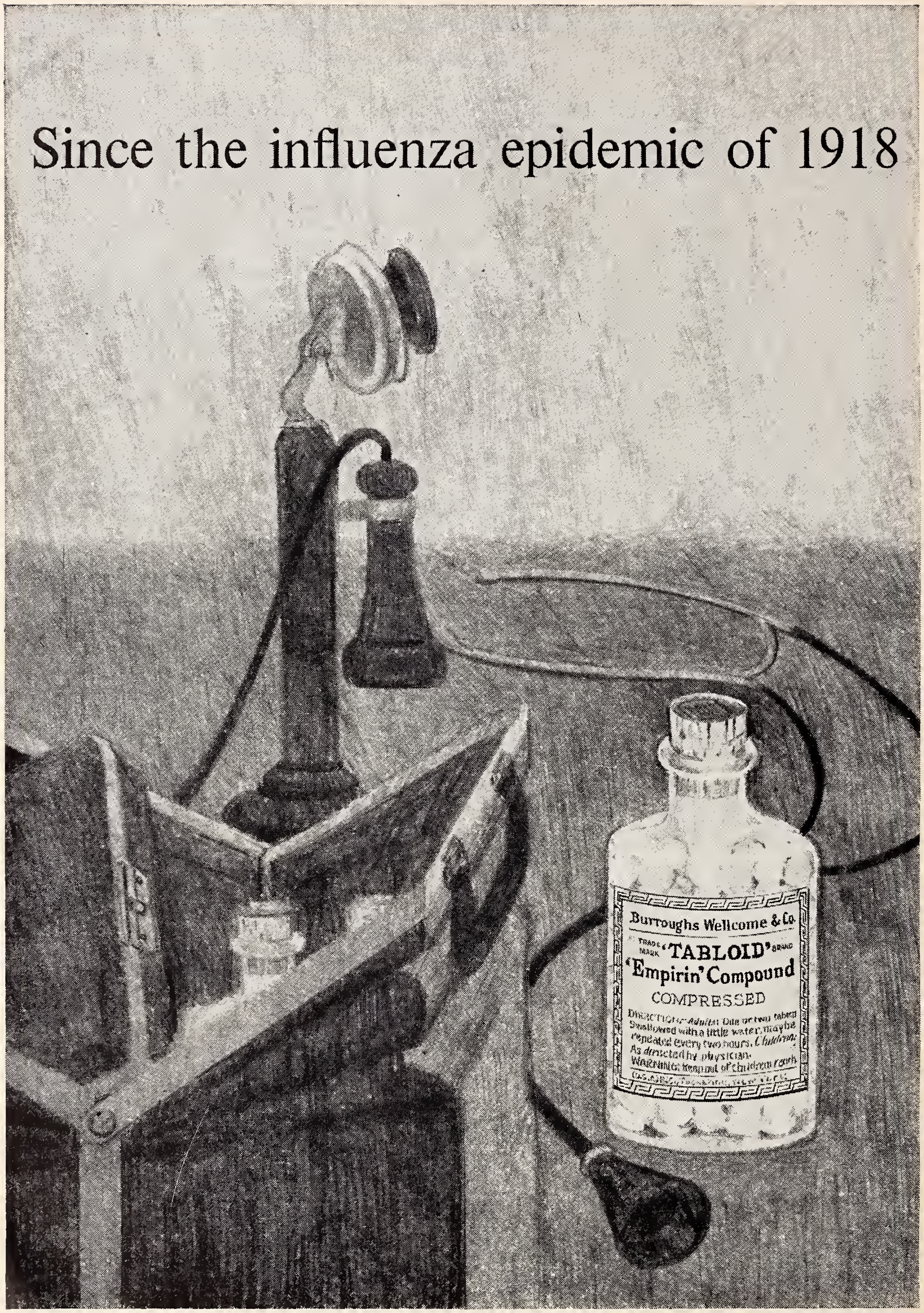
"Incidence of Nevi." Cullen, S. I. AMA Arch of Derm 86:40, 1962.

CYSTOSARCOMA PHYLLODES

The authors review the literature pertaining to cystosarcoma phyllodes of the breast since its identification by Johannes Mueller in 1838. The previously reported series of cases are reviewed and discrepancies in conclusions are discussed.

Twelve patients with cystosarcoma phyllodes have been treated at the Henry Ford Hospital from 1935 to 1960. Patients ranged from 31 to 73 years in age, the average being 46 years old. A short duration of symptoms was characteristic, and this feature tends to confirm the common observation of sudden acceleration of growth which has been emphasized by other investigators. Two of the twelve tumors were malignant. Large size, however, was prominent in only five of the twelve, these being eight centimeters or greater in diameter.

Continued


Since the influenza epidemic of 1918
Burroughs Wellcome & Co.
TRADE MARK 'TABLOID' BRAND
'Empirin' Compound
COMPRESSED
DIRECTIONS—Adults: One or two tablets swallowed with a little water, may be repeated every two hours. Children: As directed by physician.
WARNING: Keep out of children's reach

....the first choice of many physicians to relieve aches, pains, fever, and general malaise of colds and flu.

Symptomatic and supportive treatment of patients with upper respiratory infections still consists largely of rest, analgesics, fluids and nasal decongestants. During the fateful influenza epidemic of 1918, 'Empirin' Compound was widely used and became well known as a well tolerated and reliable analgesic combination. It was one of the few available analgesic products effective in simultaneously reducing fever and relieving the general malaise which often accompany the flu.

Later, 'Empirin' Compound with Codeine took its place with the widely used 'Empirin' Compound, as a product useful when increased analgesia or antitussive action was desired. Today, 'Empirin' Compound with Codeine is one of the most widely prescribed drugs in medicine, providing physicians with a dependable analgesic, especially useful in relieving the symptoms of colds and flu. We believe you will also find 'Empirin' Compound with Codeine Phosphate gr. ¼ (16 mg.) or gr. ½ (32 mg.) particularly useful in treating the troublesome cough that is often part of the influenza symptom complex.

'EMPIRIN' COMPOUND with CODEINE PHOSPHATE *

gr. ⅛ gr. ¼ gr. ½ gr. 1

100 'TABLOID' 'Empirin' Compound
BURROUGHS WELLCOME & CO.
100 'TABLOID' 'Empirin' Compound with Codeine Phosphate, No. 1
100 'TABLOID' 'Empirin' Compound with Codeine Phosphate, No. 2
100 'TABLOID' 'Empirin' Compound with Codeine Phosphate, No. 3
100 'TABLOID' 'Empirin' Compound with Codeine Phosphate, No. 4
KEEP COOL AND DRY
BURROUGHS WELLCOME & CO.

* Available on oral prescription where State law permits. Subject to Federal Narcotic Regulations.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

in low back pain

Trancogesic helps the whole patient by breaking the triad of pain

The action of Trancogesic is direct and as simple as 1, 2, 3. Its tranquilaxant component—chlormezanone—1. reduces emotional reaction to pain...2. decreases skeletal muscle spasm...and 3. its aspirin component dims the patient's perception of pain. Thus, Trancogesic treats the *whole* pain complex, helps the *whole* patient—*with unsurpassed safety.*

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Differential diagnosis must include lipoma, breast hypertrophy, fibrocystic disease, adenocarcinoma, carcinosarcoma, osteoid sarcoma, angiosarcoma, liposarcoma and lymphomas.

It is pointed out that for the most part cystosarcoma phyllodes is a benign condition. The malignant lesions either recur locally or metastasize hematogenously. Only one case of regional lymph node metastases has ever been reported. Therefore, the treatment recommended by these authors for the malignant cases is an extended simple mastectomy which would include a wide margin of local tissue and the underlying pectoralis major. The more common benign form is apparently adequately managed by wide local excision or simple mastectomy.

Though cystosarcoma phyllodes is a relatively rare lesion of the breast it will be encountered frequently enough to warrant familiarity with proper management by all clinicians, especially since its characteristics vary from the usual benign or malignant breast lesion sufficiently to require an excisional procedure different from that most commonly employed for breast lesions, at least in the Minnesota area.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

Hafner, C. D., Mezger, E., and Wylie, J. H. Jr.: "Cystosarcoma Phyllodes of the Breast" S G EO 115:29, July 1962.

LOW BACK PAIN

The author suggests an active program of physiotherapy for low back pain. One army installation was able to achieve a 30% reduction in patients with low back pain after adoption of the following five point program:

1.) Physical Fitness. The physical medicine service extended a program of reconditioning exercises for hospital patients, geared to the patient's condition so as to be compatible with his disease or injury. It was carried out in ward, swimming pool, or reconditioning clinic. 2.) Obesity. Unit commanders were indoctrinated to check and determine the cause of overweight in individuals under their command. Physical conditioning programs were provided for personnel with sedentary jobs to maintain physical fitness. 3.) Proper Instruction in Lifting (Using the legs instead of back muscles.) 4.) Specific Abdominal Exercises. Every patient—low back pain or otherwise—who received reconditioning treatment— was placed on specific abdominal strengthening exercise before his return to duty. The exercise was a modification of the routine sit-up, performed with the knees and hips flexed to 45 degrees. Repetitions were gradually increased. 5.) Home Program. The patient was instructed to perform 15 to 20 repetitions of the sit-up exercise five times a week on his own after his discharge from the clinic. This was designed to prevent recurrence of the low back pain. The author stresses the importance of trying to motivate the patient to help himself in carrying out this phase of prevention.

The author comments that if the abdominal sit-up exercise (with knees and hips flexed at 45 degrees) were adopted as a home exercise program for all adults in the United States, the incidence of low back pain, which apparently continues to be high, might be significantly reduced.

Courtesy of Medical Abstract Service
Berwyn, Illinois

"Low Back Pain: With an Approach Toward Prevention" Sheffield, F. J., Military Med. 127:232, March, 1962.

CORTICOSTERIOD TREATMENT OF LYMPHOMAS

Since their initial availability in 1948 the corticosteroids have sporadically been tried in the treatment of the lymphomas, with varying degrees of success being reported. The authors have attempted to evaluate the role of the corticosteroid hormones in a series of fifty-three patients with systemic malignant lymphomas. Many had been treated previously with alkylating agents or radiation or both.

The patients were given variable dosages of prednisolone, and, in some instances, prednisolone combined with chlorambucil. The patients treated had Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma, and giant follicular malignant lymphoma. Chronic lymphocytic leukemia was not included in the study.

Thirty-six patients had prednisolone therapy alone. In seventeen others chlorambucil was added after response to prednisolone had been determined. Regressions due to prednisolone occurred in 28 patients (53%). More frequent remissions of longer duration occurred in patients with lymphosarcoma. Some patients not responding to 30 mg of prednisolone a day would respond to daily doses of 100 to 200 mg. Side effects consisted of gastric and duodenal ulcers, infections, and increased nervousness. Edema, adrenal insufficiency and muscle wasting were also noted in some instances.

The results obtained compare favorably with the percentage of regressions obtained with alkylating agents. Since the mode of action of the corticosteroids is different, they may be effective in cases refractory to alkylating agents. The authors feel that the potential danger of harmful side effects is no greater than that to be expected from alkylating agents. Another benefit cited from the use of corticosteroids is the control of hemolytic anemias often associated with these diseases. These investigators conclude that the intelligent use of the various agents (alkylating compounds, antimetabolites, corticosteroids, and radiation) should result in improved palliation in patients with malignant lymphoma.

The above study supplies valuable data in the evaluation of further adjuncts in the palliative management of the malignant lymphomas. Of particular importance is the stress placed on the intelligent use of the many therapeutic modalities now available. Apparently the corticosteroids are an additional therapeutic agent of definite value in the often discouraging management of the malignant lymphomas.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"The Role of Corticosteroids in the Treatment of Malignant Lymphomas" Kofman, S.; Perlia, C. P., Boesen, E.; Eisenstein, R.; and Taylor, S. G. Cancer 15:338 March - April, 1962.

ORAL THRUSH IN INFANTS

Thirty-six newborn infants with oral candidiasis were divided into three groups. One group was treated with a non-staining form of gentian violet (methyl rosaniline) in an aromatic liquid vehicle (Larylgan, Ayerst). The second group was treated in a similar way using a half per cent aqueous solution of gentian violet, while the third group was treated with a saturated solution of sodium bicarbonate.

Continued

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ffects of selective filtration of Phenol by an improved Micronite Filter treated with PFA-17

›duction of the KENT Micronite filter in 1952 marked a notable
evement of Lorillard research and led to widespread consumer pref-
ce for filter cigarettes. Continuing scientific studies conducted at
llard Research Laboratories encompass rigorous investigation of cig-
:e smoke composition, modification of smoke by effective filtration,
effects of smoke per se as well as of its specific constituents. The most
nt outcome of such research is an improved KENT Micronite filter
enhanced ability to remove selectively specific undesirable compo-
s of smoke. A brief summary of research which led to this develop-
t is given below for the information of those who may be interested.

Studies of Effects of Smoke on Ciliary Function

ɔus materials including cigarette smoke have been reported to in-
: ciliary function. Cilia are microscopic hairs projecting from spe-
zed cells found in a wide variety of organisms. Cilia beat in rhythmic

unison to create wave-like motion. The effect of these sweeping m ments is to propel surrounding fluids steadily in one direction. In ma in other animals, cilia of the respiratory tract are associated with secre cells which provide a thin film of mucus that is kept flowing by ci action. Inhaled foreign particles become trapped in the mucus or o surface. The biological function of respiratory cilia is to transport for particles away from the lung area on steadily flowing mucus current

Ciliated cells of various organisms are physiologically quite sin Ciliated tissues from the mouth and esophagus of the frog have tradi ally been used in studies of ciliary function. Lorillard researchers d oped a carefully standardized technique for study of ciliated tissues o frog exposed to various environmental conditions, such as cigarette sm

In these studies, the tissue preparation is placed in the exposure char of a specially designed instrument through which laboratory air or sr is drawn in calibrated volumes. The tissue is first exposed to labora air and at the end of a 30-minute equilibration period is transferred humidified observation chamber and placed under a microscope at magnification. Fine carbon particles placed at one end of the tissue toward the opposite end and give a visual determination of the ra mucus flow, an index of ciliary action. The time required for particl flow 2.5 mm. is recorded as the norm or control rate. The tissue is the posed to measured puffs from a test cigarette and again observed u a microscope to measure the rate of mucus flow after exposure. Com ison of the control rate with the exposure rate of mucus flow gi measurement of the inhibiting effect of smoke on ciliary function.

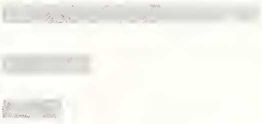
Accurate Analysis of Phenol Content of Smoke

Numerous investigators have reported the presence of phenolic pounds in cigarette smoke. Lorillard researchers have studied pheno other smoke constituents for a number of years. This research was gr accelerated in 1960 when Lorillard scientists perfected a rapid, acc method for quantitative measurement of phenol in smoke, employin chromatography and phenol labeled with Carbon 14. A number of nolic compounds were identified in cigarette smoke, but phenol itsel the major chemical component of the group.

Investigation established that about 80% of the phenol in smoke o in the particulate matter, the rest in the gaseous phase. Tests of po cigarette brands showed marked variations in phenol content o smoke. Unfiltered smoke contains 2 to 4 parts of phenol per thou parts of "tar." Filtered smoke is significantly lower in phenol content substantial differences in screening efficiency of various filters wer parent. The range is indicated by the following table of quantitative on three popular brands of cigarettes:

Micrograms of Phenol per cigarette

leading non-filter brand	105 mcg.
leading filter brand	35 mcg.
ENT with Micronite Filter (untreated)	24 mcg.



Mechanisms of Phenol Reduction in Cigarette Smoke

mploying a rapid technique of accurate phenol analysis, and using frog ssues as sensitive test-organs, Lorillard researchers initiated comparative udies under the observation of an independent biologist of cilia-de- essing effects of the smoke from various types of cigarettes. Repeated ob- rvations of rates of mucus flow in excised esophageal tissue of the frog nsistently gave the same result: *the more phenol in the smoke, the greater e slowdown of mucus transport,* reflecting depression of cilia. This un- pected finding indicated that cilia depression is not a non-specific effect smoke per se, but a reaction to a specific type of chemical compound.

ertain filters, such as the KENT Micronite filter, screened out more henol than could be accounted for by the volume of particulate matter nd gases removed. Researchers theorized that some mechanism for selec- ve filtration of phenol probably existed, and that selective removal of henolic irritants might be potentiated by a filter of more efficient design. physicochemical mechanism which could make phenol accessible for lective filtration was postulated as follows:

apor components of smoke condense on a solid nucleus, such as a carbon article or ash fragment in the gas stream of a burning cigarette. In the me manner, water vapor condenses on a dust particle to form a rain- rop. Heterogeneous vapors condense upon a nucleus in inverse order their volatility. The resulting spherical particle is composed of con- entric strata, with the least volatile materials at the core and the most olatile substances at the surface. Phenol, a relatively volatile compound, ould be expected to be concentrated on the surface of a particle and to e susceptible to easy removal by appropriate materials.

Selective Removal of Phenol by a New Micronite Filter Containing a Phenol-Combining Additive

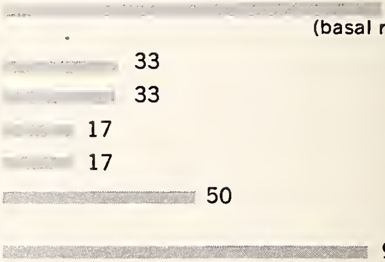
henol enters readily into innumerable chemical unions. Lorillard re- archers sought a compound which would combine with and capture henol, and be safe and effective as a filter ingredient. Many compounds ere studied and tested. One bearing laboratory designation PFA-17 tisfied the most exacting criteria and was immediately tested with ENT's Micronite filter.

The effectiveness on mucus flow of the new Micronite filter with PFA-17 compared with other brands is shown on the following chart:

MUCUS FLOW RATE

Relationship of phenol to inhibition of ciliary function

	Phenol (micrograms per cigarette)	Relative Rate of Mucus Flow
Tissue exposed to laboratory air	–	100 (basal rating)
Cigarette A (filter)	34	33
Cigarette B (filter)	35	33
Cigarette A (non-filter)	104	17
Cigarette B (non-filter)	108	17
KENT Micronite filter (untreated)	24	50
New KENT Micronite filter with PFA-17	12	96



It will be seen that under the described conditions of the experiment there is a direct relationship between the reduction of cilia depression (reflected in mucus flow rate) and the reduction in phenol content of smoke. An arbitrary index rating of 100 is given to the flow rate of tissue exposed to air; decrements in flow rate following exposure to smoke are measured on this scale. The mucus flow rate of tissue exposed to smoke from the new Micronite filter is essentially the same as when cilia are exposed to laboratory air. Under identical conditions, exposure to smoke of a leading filter cigarette results in an approximate 67% slowdown of mucus flow, and exposure to a leading non-filter cigarette results in an 83% slowdown.

Lorillard research has established that phenol is the major constituent of the phenolic group of compounds in cigarette smoke which depress ciliary propelled mucus flow. A highly effective method of selective filtration of phenols by addition of a phenol-combining agent to an acetate filter is reported. KENT cigarettes contain the new Micronite filter with PFA-17, pursuant to Lorillard policy of continuous improvement of products through research.

P. LORILLARD RESEARCH LABORATORIES

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Cures with gentian violet and the non-staining solution were achieved in about the same average periods, which ranged from four days to three weeks (usually about one week was sufficient). The total treatment days for all twelve children were (a) gentian violet, 107; (b) Larylgan, 108; (c) sodium bicarbonate, 153. Although the disease may have cleared spontaneously in about the same length of time, the advantages of therapy arise from the more rapid early improvement and relief from distressing symptoms.

Comparative trials of a new non-staining dye (Larylgan, Ayerst) indicate that it has about the same therapeutic effectiveness as gentian violet in oral candidiasis (thrush) in the newborn. It has, however, certain advantages which appear to tip the scales in its favor. It is pleasant tasting and non-staining, while gentian violet stains surrounding tissues, clothing, and bed linens, giving the child on whom it is used a rather startling appearance. The cloth stains are permanent. An effective, non-staining substitute, therefore, should be a welcome addition to the therapeutic resources in treating this condition. The author points out that while oral thrush is essential a benign and self-limited condition, therapy is important on two counts: (1) the oral thrush should be cleared as quickly as possible to reduce the risk of other forms appearing —gastrointestinal, visceral, and cutaneous, which might prove stubborn (especially the cutaneous); and (2) in its acute stage, oral thrush in itself is distressing to the young patient who shows evident discomfort in sucking, with possible nutritional consequences. While antifungal agents have been used, they are less effective in oral candidiasis infections in other forms. In addition to the hazard of intestinal disturbances in infants, antifungal antibiotics present certain inconveniences of storage and administration which, up to the present, have left gentian violet the treatment of choice for oral thrush in infancy.

Courtesy of Medical Abstract Service
Berwyn, Illinois

"The Treatment of Thrush in Infants" Dubow, E. Arch Ped 79:91, March, 1962.

TREATMENT OF PEPTIC ULCER

In severe peptic ulcer unresponsive to conventional dietary and antacid management the authors suggest the use of continuous gastric aspiration and parenteral administration of anticholinergic drugs. These measures stop otherwise intractable pain at once, the patients remain symptom free, and the ulcer apparently heals.

The authors base their conclusions on the use of these measures in over 1000 patients, not one of whom suffered a silent perforation or bleeding.

Gastric aspiration is helpful from a diagnostic standpoint as well. The volume, degree of acidity, and presence of blood are determined. Excess amounts (600 cc or more in 12 hours) indicate pyloric obstruction or hypersecretion. Food particles in the aspirate suggest pyloric obstruction. Excess amounts of aspirate may be noted in gastric atony after vagotomy, or neuropathy from other causes. Occasionally cytological examination of the aspirate may be of value.

Another clinical advantage of the technic is the differentiation of organic from functional pain, as in the occasional situation where x-ray studies are normal. If the discomfort of the tube exceeds the pain complained of, the pain is probably functional.

Continuous gastric aspiration has the potential drawbacks of possible electrolyte imbalance, esophogeal erosion, and delay in operative management of obstruction. Anticholinergic drugs are contraindicated in the presence of organic pyloric obstruction, massive hemorrhage, potentially obstructing prostatic hypertrophy and glaucoma.

Courtesy of Medical Abstract Service
Berwyn, Illinois

"Two practical, but Often Neglected, Aspects of the Management of Peptic Ulcer" Borland, J. I., Mcbee, J. W., Davis, T. D., and Ruffin, J. M.; J M A Alabama 31:294, March, 1962.

PROPHYLACTIC HEPARINIZATION

On the basis of previous clinical studies the authors present the thesis that in all postoperative patients two significantly critical periods of hypercoagulability occur, and that minimal anticoagulation during these periods will prevent thromboembolism. Previous studies demonstrated hypercoagulability during the operation, and at the time the patient was first allowed physical activity after initial postoperative immobilization. Objective evidence of this conditon was manifested in a thrombocytosis and a low Lee-White coagulation time. Administration of aqueous heparin prophylactically in anticipation of these two events was safe and effective as regards maintenance of normal coagulation times and platelet counts, and, thus, the prevention of thromboembolism.

This procedure was followed in fifty-two high risk patients (extensive surgical procedures, older age groups, patients with heart disease, or previous thromboembolic episodes). No instance of serious hemorrhage due to heparin occurred and no fatal thromboembolic phenomena were observed. There was one instance of pulmonary infarction recognized in a patient who had not been given Heparin prior to resumption of activity and whose Lee-White coagulation time was two minutes. Two other patients died of presumed pneumonia and were not subjected to post mortem examination.

The authors explain the mechanism of the two periods of hypercoagulability on the basis of a phenomenon of accumulation of pulmonary megakaryocytes which suddenly release excess platelets at times of resumption of activity. They recommend that heparin anticoagulation as outlined in their article be given to all surgical patients for the two periods of hypercoagulability in order to prevent postoperative thromboembolism.

Since the incidence of thromboembolism remains a prominent cause of surgical fatality despite early ambulation, vein ligations and ordinary anticoagulation routines, the authors are to be commended on the work they have published in the last four years on this problem. Their solution seems almost too simple. Certainly the technic is one employable in any hospital with ordinary laboratory facilities. Perhaps adoption of the suggested plan in the high risk patients, rather than in all surgical patients would be a reasonable approach in the reduction of thromboembolism.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

Sharnoff, J. G., Kass, H. H., and Mistica, B. A. "A Plant of Heparinization of the surgical Patient to Prevent Post Operative Thromboembolism." S G & O 115:75, July, 1962.

End

A DIFFERENT SLANT FOR TREATING ACNE

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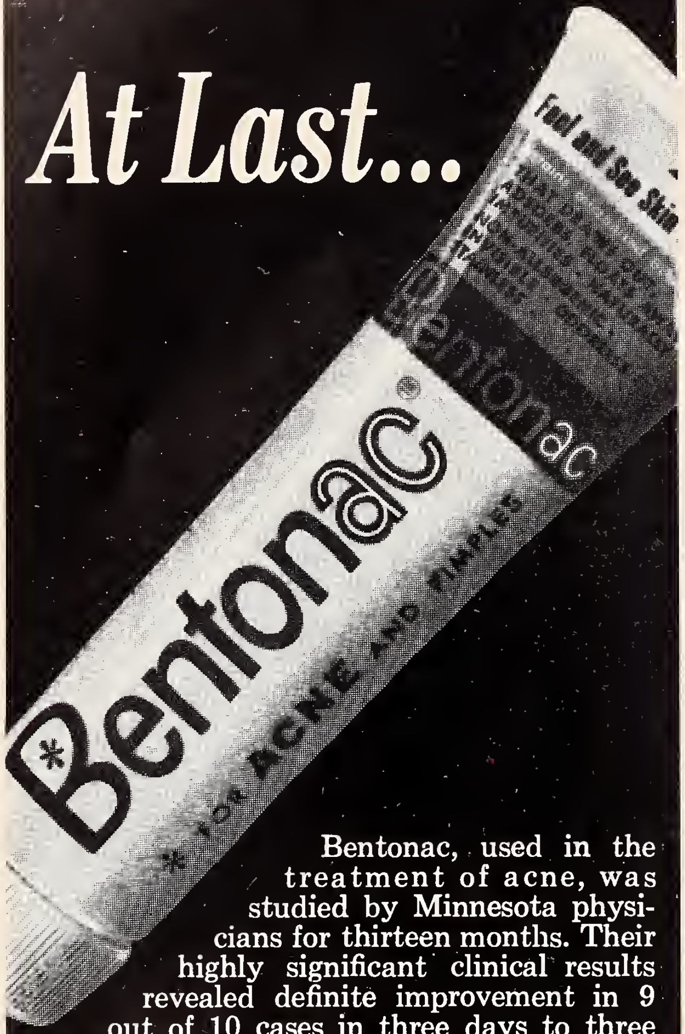

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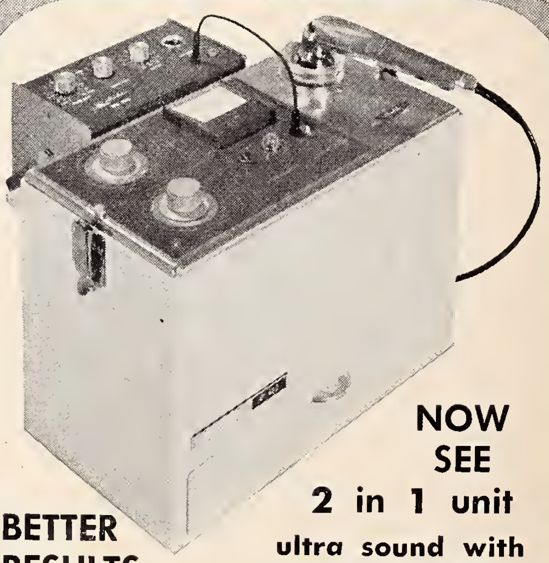

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Book Reviews

DRUG THERAPY—F. C. Ferguson. Lea and Febiger, Philadelphia. 1962—410 pages, $7.50.

There is a need for a small book on drugs that the physician can slip into his pocket to carry on ward rounds or into his bag for quick reference on house calls. "Drug Therapy" by Ferguson is just such a pocket book packing a large quantity of practical pharmacology into a one pound package.

In such a handbook as this a section on placeboes deserves to be included. There is no chapter on this subject in the book, although there is a reference in the section on vitamins as follows: "Most times when vitamins are given, the materials are totally wasted and such therapy only represents placeboes administration by physicians lacking enough nerve to use straightforward placeboes for psychic effects." Most skilled clinicians are well aware of the psychic effects of drugs however impotent the medication may be pharmacologically.

To be of value to the patient the placeboes must be given the respect accorded other potent drugs. Should the patient discover that he is getting lactose gr V t. i. d. or perhaps be so informed by a tattling nurse the value of the drug is gone; so, likely, is the patient; and the physician will have the opportunity to reconsider his prescription of "Straightforward placeboes."

Reuben Berman, M.D.
Minneapolis, Minn.

RENAL BIOPSY-CLINICAL AND PATHOLOGICAL SIGNIFICANCE—G. E. W. Wolstenholme, and M. P. Cameron. Little Brown and Co., Boston, 1962—393 pages, $10.00

A Ciba Foundation Symposium in 1961 has been edited to present the current status of renal biopsy. It is now eleven years since the technique was described and it is evident from this compilation that considerable progress in the understanding of renal disease has occurred through the use of renal biopsy. Minnesota readers will be particularly interested in the contribution of Vernier et al. from the University of Minnesota in their original descriptions of changes in the epithelial foot processes in the nephrotic syndrome seen under the electron microscope. What is not evident in this book are the practical difficulties associated with the problem of any individual becoming proficient in the art of safely obtaining percutaneously a bit of renal tissue. Renal biopsy is still largely an investigative tool to be used in large medical centers.

Reuben Berman, M. D.
Minneapolis, Minn.

MANAGEMENT OF HYPERTENSIVE DISEASES—Joseph C. Edwards, A. B., M. D., F.A.C.P., F.A.C.C. C. V. Mosby Company, St. Louis, Missouri. 1960—439 pages, $15.00.

In this book Dr. Edwards, assistant professor of clinical medicine at Washington University School of Medicine in St. Louis, Missouri, discusses the various aspects of hypertension with special emphasis on its diagnosis and management. There is a thorough and up to date discussion of the etiology of hypertension and its natural history. Much space is given to the description of antihypertensive drugs and their use singly and in combination. A chapter written in collaboration with Dr. Seymour Monat is devoted to the problem of hypertension in pregnancy. The role of surgery in primary and secondary hypertension is discussed.

There are numerous detailed case histories illustrating points the author wishes to emphasize. The book contains many photographs and graphs which are well planned and reproduced. There is a good index and a very extensive bibliography mostly from the literature within ten years of publication.

This book is quite detailed in its discussion of the diagnosis and management of hypertension and should prove very helpful to residents, general practitioners, and all those interested in internal medicine. It is to be expected that more editions will follow.

J. C. Moller, M.D.
Duluth, Minn.

THE AUTOBIOGRAPHY OF SCIENCE — Forest Ray Moulton and Justus J. Schifferes. Doubleday & Company 747 pages, $5.95.

This unusual book deals with many of the greatest scientists the world has known. A considerable number of these scientists have been physicians, beginning with Hippocrates, who lived in 460 B.C.

Most of the descriptions are dealt with in the scientists' own language and each significant contribution is briefly described.

Of the older scientists, this anthology deals with Gallileo, Ambrose Pare, William Harvey, Isaac Newton, Edmund Halley, Thomas Malthus, and many others.

Of the contemporary scientists, Samuel Langley in aerodynamics, Madam Curie in radioactivity, Albert Einstein in relativity, Ernest Lawrence in atom smashing, and Henry D. Smyth, who again proved Einstein's equation, and many others are dealt with each so fascinatingly that it is difficult to place the book on the shelf.

This book should be in the hands of educated men for its interesting reading and valuable reference.

Carl O. Rice, M.D.
Minneapolis, Minn.

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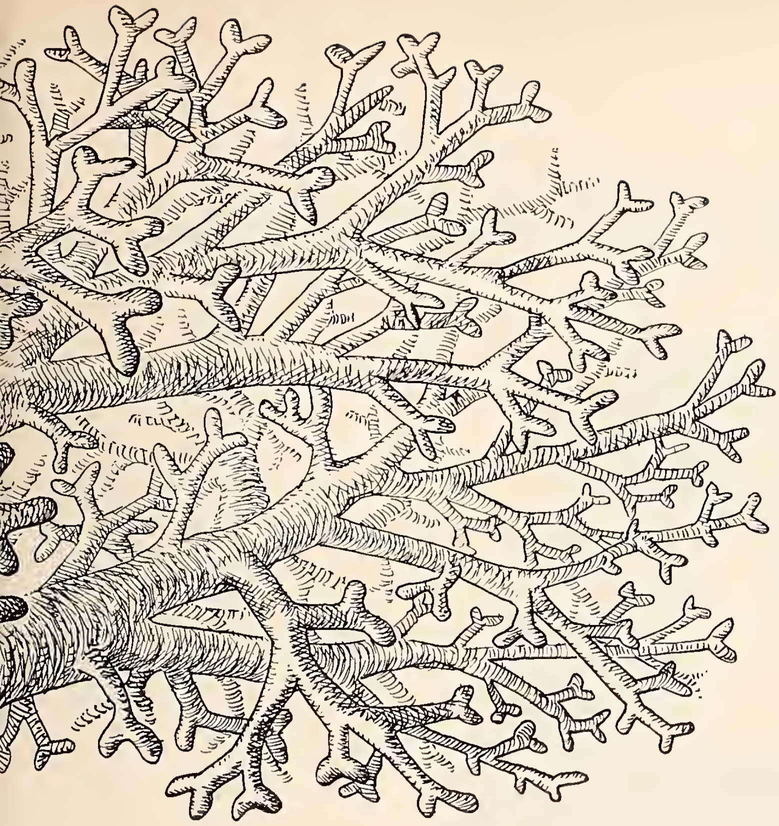

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STRABISMUS. Symposium of the New Orleans Academy of Ophthalmology. Edited by George M. Haik M. D., St. Louis, C. V. Mosby Company, 1962. 369 pages, numerous black-and-white drawings and photographs, chapter references, index. Price $18.00.

This volume comprises the individual presentations and recorded round-table discussion of six authorities at the eleventh annual New Orleans Academy meeting which was for the second time devoted to the subject of crossed eyes. Unlike the usual text book, this well edited symposium gives the resident or practitioner of ophthalmology the advantage of varying approaches to this controversial subject and in the end he is comforted that the authorities agree on as much as they do.

Marshall Parks, a specialist in pediatric eye surgery in Washington, D. C., discusses the important role of abnormal accommodative convergance and the management of childhood squint. John Henderson, Professor of Ophthalmology at the University of Michigan, reviews the scant knowledge of the neuroanatomy of strabismus. Experiments have shown that suppression amblyopia is cortical, occurring in sensorally normal but deviated eyes. David Cogan, Professor of Ophthalmology at Harvard, discusses normal and pathological nystagmus in a lucid style. He points out that this is difficult as the Greek word itself means "drowsiness." The vestibule-ocular reflex is very sensitive and unappreciated as he shows by the case of a physician who, after streptomycin damage to the vestibular nerve, was unable to read unless he rigidly supported his head due to lack of reflex compensation for his heartbeat!

Doctor Jampolsky of Stanford University presents an interesting, "laissez-faire" approach to the management of small degree deviations in adults and discusses the controversial A-V syndrome. R. Berke of Columbia University outlines from his large experience operative principles, especially in vertical deviations which he stated can be so confusing that many surgeons ignore them altogether. H. Brown of New York University discusses diagnostic devices and operative complications, an undercorrection which can be remedied at a second operation being preferable to an overcorrection which is as hard to repair as it is to explain to the parents. A long, informal, informative round-table discussion concludes this new book.

William S. McClanahan M.D.
Minneapolis, Minn.

DOCTOR AND PATIENT AND THE LAW—Stetler, C. Joseph, LL.B and Moritz, Alan R., M. D. The C. V. Mosby Company, St. Louis, Missouri, $14.75, 529 pages

This is an excellent reference book for the physician who wishes to obtain some pointers on how to conduct himself in court. It also provides regulations outlining the duties and restrictions imposed upon the doctor by statute. It explains the physician's liabilities in detail and clarifies many of the mysteries of trial procedure.

For the hospital or medical institution wishing to draw up the numerous authorizations, documents, constitutions, and by-laws, this book contains the models.

For the attorney who needs a list of cases cited, there is a chapter which gives these references.

J. H. Strickler
Minneapolis, Minn.

PRIMER OF CLINICAL MEASUREMENT OF BLOOD PRESSURE, Burch, G. E. and DePasquale, N. P.: C. V. Mosby Co., St. Louis, Mo., 1962, 141 pages $5.50.

Every physician who is obliged to measure the arterial tension in systole and diastole, and this includes nearly all in clinical practice, will find perusal of this little monograph of a hundred odd pages a rewarding experience.

The authors introduce the subject with a thorough historical review from Stephen Hales' direct arterial measurements in animals in 1733 to the electronic transducers of today. A comparison is given for diastolic measurements determined clinically and directly showing a close relationship whether the criterion is the 4th phase (change in character of sound) or the 5th phase (disappearance of sound). Many causes of error are described. Two that this reviewer has encountered are not mentioned: kinking of the tubing so that the pressure in the cuff is not imparted to the manometer; and, in the mercury column apparatus, plugging of the top of the tube so that the rising mercury must compress the air above. The fantastic readings that result should divert the attention of the physician from the patient to the apparatus.

Reuben Berman, M. D.
Minneapolis, Minnesota

PSYCHOSOMATIC MEDICINE, Nodine, J. H. and Moyer, J. H., Lea and Febiger, Philadelphia, Penna. 1962 Pages 1002, $16.50.

The subtitle of this book is "The First Hahnemann Symposium" and included are contributions from 136 authors. It is divided into 19 subsections each including a handful of papers followed by a panel discussion. Obviously these represent the prepared presentations at the symposium and the extemporaneous concluding discussions.

In general the discussions seem out of place between the permanent covers of a book representing as they do impromptu thoughts rather than carefully considered opinions.

The sections extend from the mundane topics of management of psychic disturbances associated with somatic diseases, to the far reaches of analytical psychiatry with emphasis upon drug therapy of psychiatric problems.

This is a valuable book for the library of the non-psychiatrist—the surgeon, the general practitioner, the internist. These physicians deal with the great group of gravely ill patients who suffer from profound psychic disturbances from life threatening (and life taking) disease. It is usually impossible to refer such "organic" problems to psychiatrists.

The success of the physician in his handling of the organic problem often rests upon his ability to recognize and treat the psychiatric components. Again and again the point is made that the physician must handle these problems himself. He must treat the fears and depressions for which he may not have prepared himself as well as the heart disease or surgical conditions where he believes he is an expert. And it is apparent in the land of free choice of physician that the expert who wishes to ignore psychiatry and practice the trade he has learned in medical school will find precious few patients to sit still under his mechanic's hand.

Reuben Berman, M. D.
Minneapolis, Minn.

End

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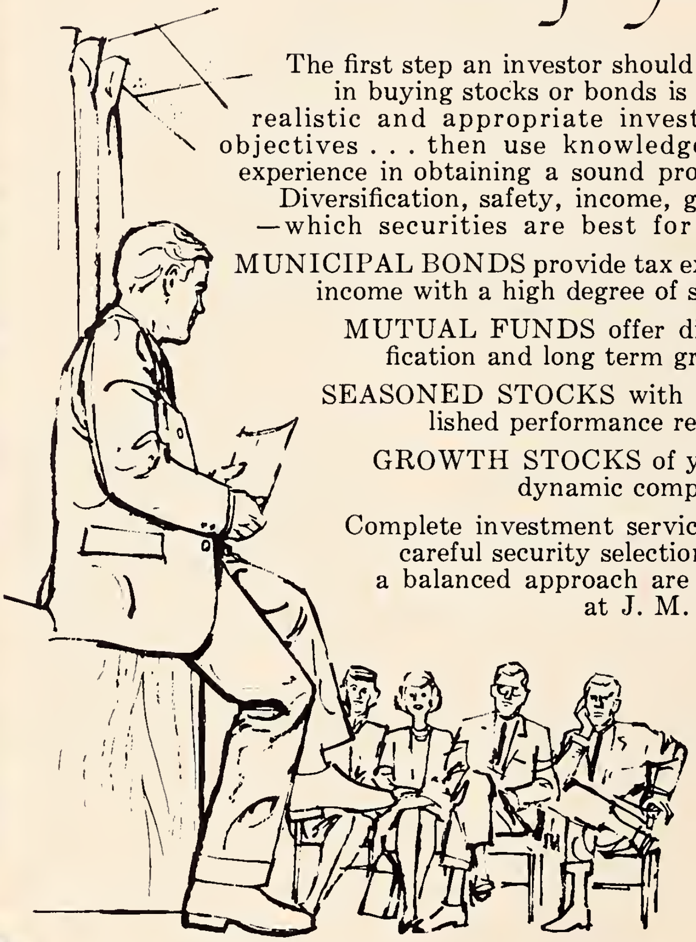

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Medicine IN WRIGHT COUNTY, Part VIII

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

A. Dair Haskell, was in South Haven for a number of years prior to 1907. # He graduated from the University of Minnesota and was licensed in April, 1899. He may have come to South Haven soon after that, but he is not definitely known to have been there until 1902. At the October, 1903 meeting of the Wright County Medical Society he and Dr. Rogers invited the members present to the Courthouse jail in order to show them a few cases of gunshot wounds on some prisoners. He was a member of Sheriff John Nugent's posse when, in the woods near South Haven, it captured a gang bent on a robbery. He left Wright County in 1907.

Dr. Haskell was born in Anoka May 16, 1877. His father was E. O. Haskell, his mother, Leonora A. Lawson. He interned at the City of County Hospital in St. Paul, practiced for a very short time in Osseo, Hennepin County, and then for a number of years in Carlos, Douglas County. He moved to Alexandria in 1909 and had a well established practice by 1910. There he practiced for four decades and was very active in community affairs (was mayor of Alexandria, member of the City Council, etc.). He was a member of the Park Region Medical Society and was its president in 1928. He was a member of the Minnesota State Medical Association and became a life member in 1951. He had retired about a year before he died December 2, 1951 and was survived by his widow (Effie M. Campbell). He had suffered from Parkinson's Disease for some time and died from an influenza pneumonia.

Edward P. Hawkins, of Montrose, was born in Carthage, Illinois, August 9, 1863, the son of William R. and Julia (Wright) Hawkins. In 1887 he graduated from Adventist College at Battle Creek, Michigan, and in 1897 completed his medical course at the State University of Michigan Medical School at Ann Arbor, Michigan. He taught school for several years in the interim. He located at Montrose in October, 1897 and was one of the most successful general practitioners and surgeons in the entire district. He worked very hard and long hours, on the roads winter and summer, and was generally successful and very well liked. He converted a home into a hospital and also established a Nurses Training School, which was superintended by his wife, a registered nurse; it was incorporated in 1914. The nursing course took three years and started with an enrollment of six nurses. He practiced and operated his hospital up to the time of his death in 1942, after forty-five years of valuable service. He was a charter member when the Wright County Medical Society reorganized in 1903. He was licensed on October 12, 1897.

#There is some uncertainty about his practice in South Haven, as Dr. Haskell himself does not mention it in a biographical form he submitted to the State Medical Association.

Continued

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His hospital opened in March, 1903, to accomodate emergency surgery and illnesses, the first hospital in Wright County; it was much needed as hospital facilities were no closer than Minneapolis and Litchfield. He lived next door to the hospital and was available every hour of the day or night. Mrs. Hawkins was a valuable assistant.

Dr. Hawkins was a deeply religious man and an Adventist. It was not beneath his dignity to start an operation with a short prayer for help and guidance in particularly serious cases. He was successful in outside investments and in later years was able to go to Florida each winter for a well-earned rest. He participated in local affairs, was school officer and health officer in Montrose and held other civic positions.

His hobbies were flowers, fruit trees, birds, travels and financial expansions. When he died he left a considerable amount of money to the Adventist School at Hutchinson, Minnesota.

Dr. John J. Catlin assisted Dr. Hawkins for many years in surgical cases and he can attest to his superior skill and success, sometimes under handicaps and improvisations. As an example of what could and did happen in those early days of surgery: Dr. Catlin took a patient, a young man, to Montrose for help in reducing a fracture of the upper end of the humerus, which could not be reduced and which x-ray showed to be likely to cause a permanent disability. An open operation was decided upon. At the operation it was possible to get the fragments together but suture material used to hold them in place would break and allow the fragments to again separate widely. In the middle of the operation Dr. Hawkins went out into his back yard with a pair of plyers, cut a barb wire fence and took a strand of the wire into the operating-room for sterilization. He put on a fresh gown and prepared for further surgery. The wire was used to hold the bone fragment and the wound healed perfectly with the bone in perfect position. The young man was later taken into the U. S. Army and lived an active physical life for many years, with no evidence of any disability.

He was honest and sincere as a doctor, and never did an operation which he did not think was necessary; he did any operation needed, regardless of the financial condition prevailing. No one was too poor to get the kind of medical service Dr. Hawkins could give. His generation around Montrose will respect and honor him for a life of service as a physician and a public spirited man.

Dr. Hawkins married Vesta Miller of Battle Creek on January 15, 1889; she was a clasmate of his schooldays. They had one adopted daughter who became a nurse. He was buried in Hutchinson, Minnesota.

Arthur L. Hill, was located at Monticello from the time of his graduation from the Medical School of the University of Minnesota in 1896 through 1909. In 1903 he became a charter member of the Wright County Medical Society when it reorganized on July 1. At this meeting he was appointed censor for 1904. Later he practiced in Big Lake, Sherburne County. He was licensed June 9, 1896.

Eugene Hubbell, was listed in Clearwater in 1886. He was a homeopath, having graduated from the Hahnemann Medical College and Hospital, Chicago, in 1883. He was licensed in Minnesota September 18, 1884. He remained in Clearwater four years and then located in Waseca in March, 1889 where he stayed only about two years. * From 1893 to at least 1902 he practiced in St. Paul.

Dr. Hubbell was born at Wiedsburg, Wisconsin, November 26, 1856. His father was Wellington Hubbell of New York; his mother, Mary Patrick of Ohio. He died in St. Paul April 20, 1932 from an acute hemorrhage from the urinary tract and uremia and was buried in Roselawn Cemetery. He was survived by his widow, Cora M. C. Hubbell, three daughters and one son.

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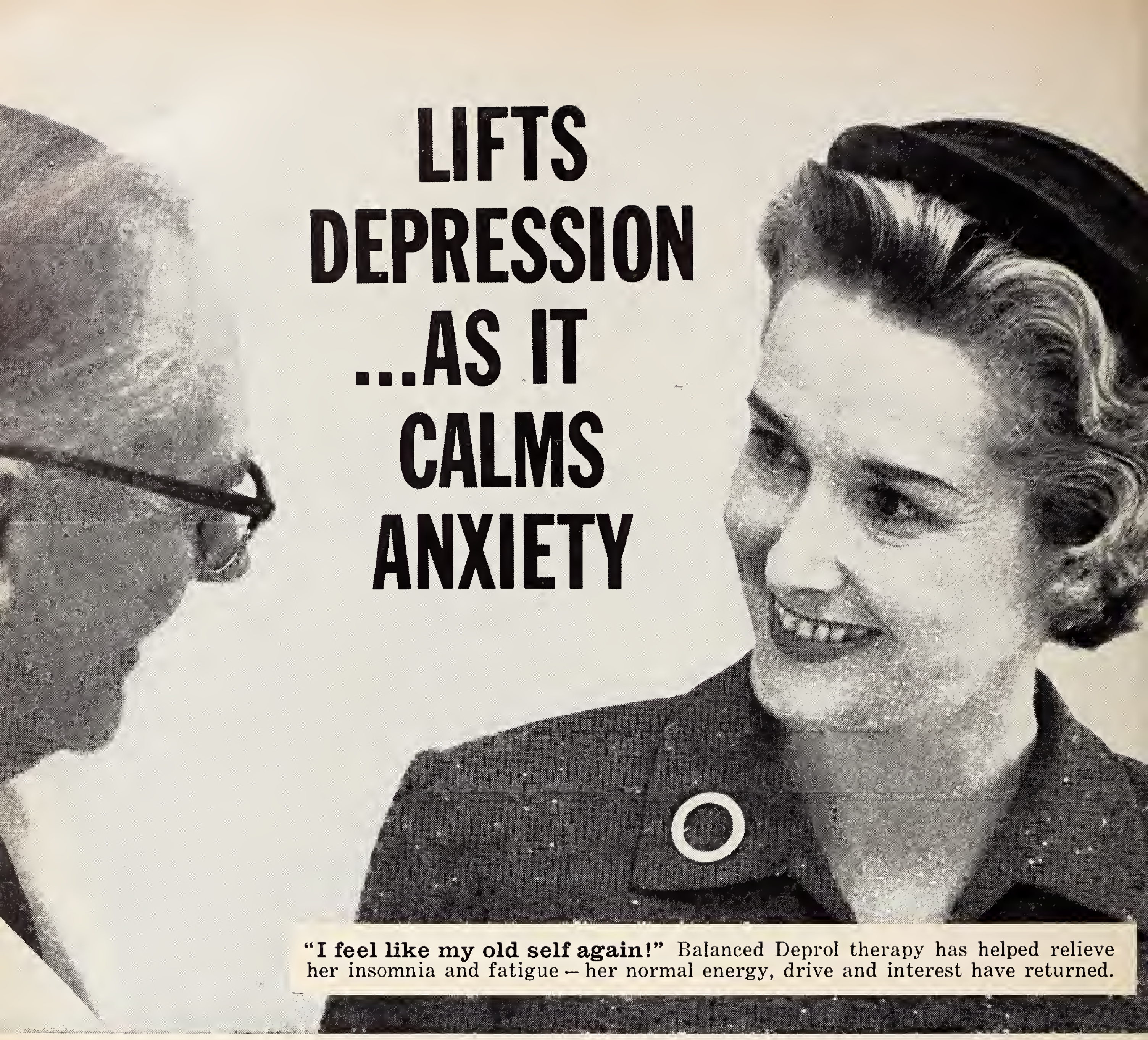
*According to "Notes on the History of Medicine in Waseca County Prior to 1901" by B. J. Gallagher and J. F. Lynn, **Minnesota Medicine**, July, 1952, p. 674, he stayed in Waseca only one year, but according to other sources he was there two years.

Continued



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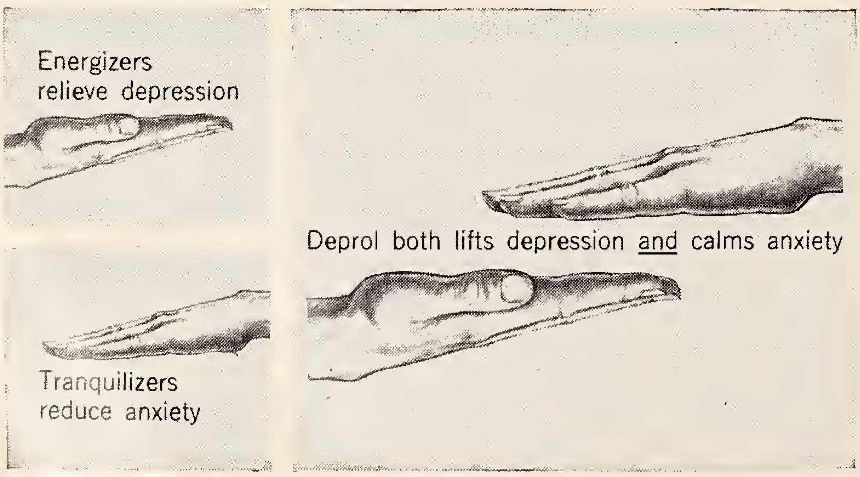

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A **Dr. Huntington** of Annandale is mentioned in a St. Cloud newspaper of July 9, 1896. Nothing more is known about him.

Francis B. Ilstrup (Illstrup), graduated from the University of Minnesota Medical School in 1894, he was licensed in July of the same year. He is on record as practicing in Cokato from at least 1896 through 1900. He probably was in Buffalo before locating in Cokato because he was a charter member of the reorganized Wright County Medical Society and was present at its first meeting August 1, 1894. At that time he gave Buffalo as his location. He called in a cousin, Dr. Orlando Ilstrup from Kerkhoven, to assist him with his work. He left the country around the turn of the century and went to Grasston, Kanabec County for a time and then moved to his old home near Buffalo. Dr. Ilstrup was a well trained and good physician and a successful surgeon, but he later became a drug addict and soon had to leave his practice. He died an addict.

Orlando Ilstrup, graduated from Univeristy of Minnesota Medical School in 1899, he practiced in Cokato from 1900 to 1913 when he died suddenly of a coronary attack. He was first located at Kerkhoven, Swift County, but was called to Cokato by his cousin, Dr. Francis B. Ilstrup, to assist him in his work when he was unable to take care of it by himself. Dr. Orlando Ilstrup was a successful general practitioner and, according to reports, he was a competent man.

Ernest Ruel Jellison, practiced in Cokato in 1883. Reports were that he was not very friendly and not very successful at that time. He was a graduate of the Medical School of the University of Michigan at Ann Arbor in 1883 and was licensed in Minnesota October 11, of the same year. At that time he gave Duluth as his location. Dr. Jellison was born at Taylors Falls, Minnesota, April 28, 1860. For some time he was located in Minneapolis and New Auburn, Sibley County. He died in 1929.

S. M. Jenks, is known only through his card in *The Big Woods Citizen* (Delano): "S. M. Jenks, physician and surgeon, Rockford, Minnesota" which appeared from April 19, 1872 until the middle of September of the same year.

Kamhoot — A physician by that name was in Wright County between 1880 and 1885. We learn from *The Delano Eagle* of December 9, 1880 that he attended a man at Smith Lake who was accidentally shot through the hip. The same newspaper of June 25, 1885 reports that Dr. Kamhoot "known to many of the Wright County people," formerly of Monticello, of late years resident of Albion, has been adjudged insane and was taken to St. Peter by a deputy sheriff. Nothing more is known about him.

Ammon D. Kingsley,* was an early settler in Wright County but his claim to membership in the medical profession is very doubtful. He was born in Washington County, New York, July 2, 1829 and came to Minnesota in 1852. He engaged in milling in Waverly and Anoka and in 1877 settled in French Lake Township, Wright County. In 1901 he moved to Minneapolis where he was known as a specialist in the treatment of cancer. It is not definitely known whether he engaged in such medical practices in Wright County. He probably was not a real physician. He died in 1911.

Christian H. Kohler, located in Maple Lake in 1887. He was still the only physician there in 1890. He was one of three brothers, all physicians, whose parents, Mr. and Mrs. Sebastian B. Kohler, were Swiss immigrants and settled in Watertown, Carver County. One brother was Dr. Frederick G. Kohler of Forest Lake, Washington County; Stewart, McLeod County and Minneapolis. The other was Dr. George A. Kohler of Minneapolis.

Dr. Kohler was born October 5, 1868. In 1884 he studied medicine with Dr. J. H. Frank of Watertown and in the fall of that year he went to St. Louis for a medical course of five months. In 1886 and 1887 he studied medicine in Chicago. He graduated from the Hahnemann Medical College and Hospital, Chicago, early in 1887 ** and immediately returned to Watertown without any definite plans of where he wanted to practice. He started to practice there, but

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*Upham and Dunlap, "Minnesota Biographies, 1655-1912."

**According to other information he graduated in the same year from an Eclectic Medical school, the American Medical College in St. Louis, Missouri. More sources, however, point to the fact that he was a homeopath.

Continued

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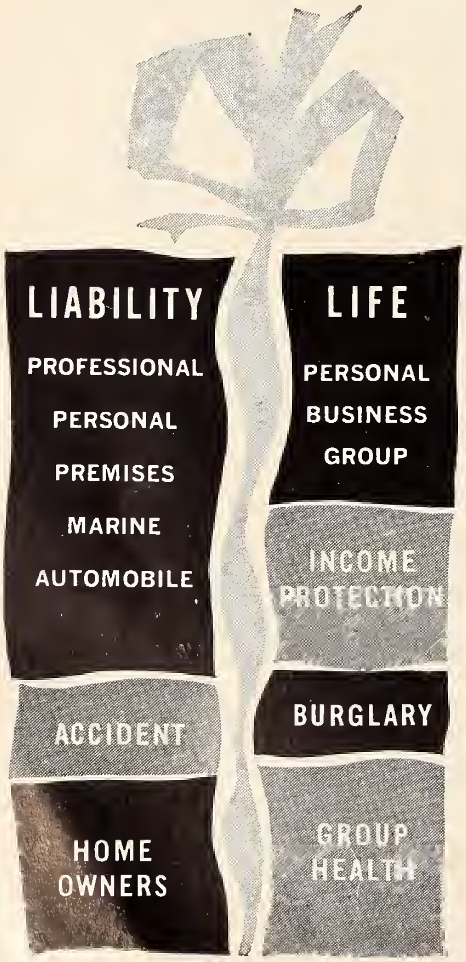
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About 1890 he practiced in Shakopee, Carver County, and then moved to Glenco, McLeod County, before the turn of the century. Still later he moved to Minneapolis and joined his brother, Dr. George A. Kohler, in the practice of eye, ear, nose and throat diseases, † but had retired by the time Dr. F. G. Kohler joined the firm. He died in California December 31, 1950.

Olaf Emil Krogstad, was listed as practicing in Cokato in 1898. He was a graduate of the University of Vermont, Burlington, Vermont, 1893. He was in Cokato but a short time as he is no longer listed there in 1900.

Dr. Krogstad was born in Trondhjem, Norway on May 15, 1861. He was licensed in Minnesota April 8, 1892 (although the year of his graduation was 1893!). At the time of his death - May 18, 1930 - it was stated * that he had practiced in Minneapolis for thirty years: he, therefore, must have moved there about 1900.

N. H. Knowles. — The earliest mention of him is in the *Rochester Post* of march, 1877, which quotes a Howard Lake paper; it states that Dr. F. J. Cressy entered into a partnership with Dr. Knowles of Howard Lake. ** As early as 1879 we find him in the camp of the Temperance Society and busy with the Temperance county convention. In 1883 he ran for the position of coroner. For a time he resided in Middleville. His activities in the Temperance movement continued; he spoke before prohibition conventions, the Albion Reform Club, etc., during 1885 and 1886. A newspaper said of him "the doctor is a good speaker." In October, 1886 at the prohibition convention he was nominated for senator, but he made a very poor showing at the election. † In 1888 he apparently engaged in farming or business as a news item from Buffalo tells that he was in town retailing a load of pure buckwheat. ‡

Nothing is known of his background. It seems he was not too successful as a physician in Wright County.

Joseph N. LaLonde, a graduate of the University of Minnesota Medical Department in 1899, was in Cokato a short time. He may have been there shortly after his graduation. No further information about him could be found. #

Robert Fulton Lynch, practiced in Montecello from at least 1886 through 1903. He was a graduate of the Eclectic Medical Institute, Cincinnati, Ohio, in 1882 and was licensed in Minnesota November 12, 1883. He was still very active in 1903 as he was a charter member of the Wright County Medical Society when it was reorganized July 1 of that year. At this meeting he was elected first vice president.

It seems Dr. Lynch practiced as a physician and dentist because a Wright County newspaper of 1886 carried this professional card for a number of months:

"R. F. Lynch, M. D.
Dentist
Office in Whitney-Gallow Building
above Music Hall
Monticello, Minn."

The papers also stated that he would visit different towns in Wright County. He continued to advertise as a dentist through 1888. In January of that year he announced his arrival in the near future in Delano and regular visits after that.

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†"A History of Medicine in Scott and Carver Counties," **Minnesota Medicine,** June, 1948, p. 667, and the (unpublished) medical history of McLeod County by Kathryn Brummond. and Robert Rosenthal.

*Obituary in **Journal Lancet,** June 1, 1930.

"Medicine in Olmsted County and its Practitioners Prior to 1900" by Nora H. Guthrey, **Minnesota Medicine, June 1950, p. 606.

†**The Delano Eagle,** December 2, 1886.

‡**The Delano Eagle,** December 27, 1888.

#A Dr. Joseph N. Lalonde who graduated from Laval University in 1903 was licensed in Minnesota in October, 1904. He is listed in Cold Spring in 1905 and 1909 and was in Providence, R. I. in 1927. It has not been possible to ascertain whether or not these two physicians are identical.

Continued

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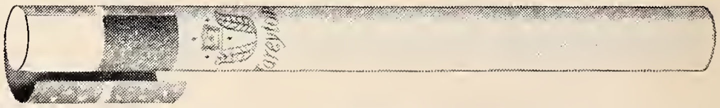

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Dr. Lynch apparently was a rather controversial figure in the 1880's. In the late winter or early spring of 1886 he was accused of somewhat unprofessional behavior, and he disturbed the harmony among the physicians of Sauk Center.

In 1885 a paper accuses him of snobbish behavior. ## He supposedly specialized in eye diseases when he left Wright County. While in Monticello he was moderately successful as a physician and left the impression that he was somewhat a visionary and well contented with his knowledge of medicine. In the late 1920's he resided in St. Paul.

William F. McCarthy, supposedly practiced in Maple Lake four or five years prior to the turn of the century. He graduated from the St. Paul Medical College in 1880 and was licensed December 31, 1883. In 1889 he graduated from the University of Minnesota. He apparently practiced in Minneapolis for a short while, then moved to New Prague, LeSueur County, in 1890. After about two years there he moved to Jordan, Carver County, where he remained many years and was county physician from 1894 to 1896. He worked hard during the severe diphtheria epidemic, 1896-1898 and was health officer of Sand Creek during this difficult time (1897). * In 1905 he moved again to Minneapolis.

He was long remembered by many friends who appreciated his thorough and sacrificing work as a physician. He is no doubt identical with the Dr. Wm. F. McCarthy who was born in Lowell, Mass. on February 3, 1857, was licensed in Minnesota April 8, 1889 (renewal of license after graduating from the U. of Minn.?), was at the State Hospital, Fergus Falls 1928 to 1933, when he moved to Seattle, Washington and died shortly afterwards, May 7, 1933 from arteriosclerosis at the age of seventy-six years.

Eugen W. McCord, located in Rockford in August, 1883. He had come from Rock Rapids, Iowa. In his professional card ** he states that he was "late of the Philadelphia Hospital," that he located in Rockford to practice medicine, surgery and obstetrics, giving special attention to surgery.

He married in October, 1883 and had his office "in the building of A. B. Bucklin on Bridge Street." † It seems he had some literary talent because in November of that year a note about the Literary Society of Rockford tells of Dr. McCord's weekly literary journal as one of the attractions, "a well conducted spicy paper." ‡

He is last heard of in the newspaper on January 3, 1884. His license was filed in Wright County December 31, 1883.

Owen McKeon, practiced in St. Michael# from 1900 to about 1903. He was born in Green Isle (or Henderson), Sibley County on January 4, 1872. Dr. McKeon received his medical education at the Minneapolis College of Physicians and Surgeons (Hamline University) in 1900 and was licensed in the same year. In 1903 he was a charter member of the reorganized Wright County Medical Society. After three years in St. Michael he moved to St. Paul where he continued to practice until his death, which occurred on his sixty-eighth birthday, January 4, 1940. He died two weeks after a heart attack, apparently suffering from general arteriosclerosis.

Dr. McKeon had taken postgraduate work in surgery at the University of Vienna but remained a general practitioner. He was of Irish stock, both of his parents—Owen McKeon and Briget Fox—having been born in Ireland. He was a member of various organizations—the Hibernians, the Catholic Order of Foresters, the Knights of Columbus— and was much interested in Boy Scout activities and the affairs of Cathedral parish. Of medical societies,

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#**The Delano Eagle** April 29, 1886, quoting the **Evening Journal** (Minneapolis).

##**The Delano Eagle** July 23, 1885.

*"A History of Medicine in Scott and Carver Counties," **Minnesota Medicine**, June, 1948, p. 669.

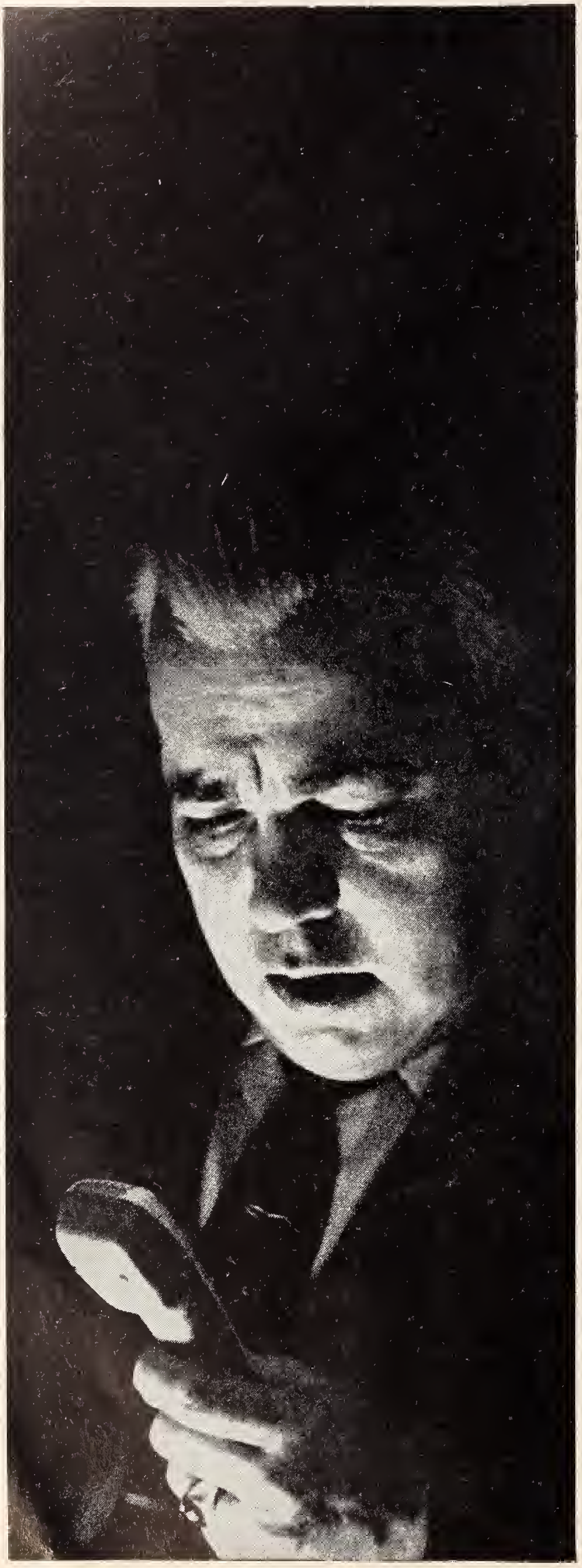
****Delano Eagle**, September 27, 1883.

†**Delano Eagle**, October 18, 1883.

‡**Delano Eagle**, November 22, 1883. It has not been possible to find out anything about this "journal," nor to locate a copy.

#According to some information he practiced in Hanover in 1899.

Continued



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he was a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association, and he was on the staff of many of the St. Paul hospitals. He was married and was survived by his wife, Margaret, one son, two daughters, and six grandchildren. He was buried in Calvary cemetery in St. Paul.

O. H. Manseau. On June 29, 1882 the *Wright County Eagle* announced "another doctor, a Frenchman from Quebec, thinks he will remain here. Name not known." This no doubt refers to Dr. Manseau whose professional card appeared August 3 of that year: "Dr. H. Manseau, Physician and Surgeon, graduate of Victoria Medical College, Montreal, Canada, Rockford, Minn." He had graduated from that college in 1882. Soon, however, rumors appeared that he might leave soon. * In January, 1883 he became very ill, but on January 18 he and Dr. Wm. Ray amputated an arm of the Hon. L. H. Rawson. ** In March he actually moved to Grand Forks, Dakota; "things were too slow for him - made $1,700 in the past eight months or about $200 per month. He leaves many friends." †

It seems he was a well trained physician and surgeon as a number of serious cases he treated successfully are recounted in the newspaper. He was licensed in Minnesota in 1883.

Dr. Mercer was in Maple Plain in 1885 or even before. Towards the end of the year he went East to settle an estate, leaving Maple Plain without a physician. He was still East in the early part of April, 1886 and the newspaper editor remarks facetiously "but there was no burial at Armstrong grave since the doctor left."

Edward Meyer, was located in Buffalo when he was licensed May 18, 1887. He had graduated in the same year from Rush Medical College, Chicago. He was still in Buffalo in 1890 as one of three physicians there. It seems he left soon after that year.

From about 1895 through 1905 he was listed in Iron Mountain, Michigan and in 1909 in Brillion, Wisconsin. Dr. Meyer was born at St. Nazianz, Wisconsin June 8, 1866. He also held a Wisconsin license (1900). He died in Manitowoc, Wisconsin August 12, 1924 of heart disease.

David Mignault, was listed in Waverly in 1885 but may have been there before. He graduated from the medical department of the University of Victoria, Canada, in 1872 and was licensed in Minnesota August 23, 1884.

In June, 1885 the *Delano Eagle* (June 11, 1855) wrote that "Dr. Mignault's father-in-law from Chicago is visiting Waverly. When last heard from Dr. Mignault was searching for relics at the ancient mound builders at or near Pelican Lake." In the following year he had some serious illness. In 1887 a partnership with Dr. Tessie was rumored. ‡ From a news item in 1888 one learns that he planned "to visit (Montrose) every Tuesday. Office at drugstore." #

In 1888 he became active in politics and attended the Republican meeting at Montrose in July. In 1889 he participated in a debate at the literary society.

According to the "Official Register of Physicians, Minnesota, 1883 to 1890" his license was revoked December 26, 1889, but the reason could not be determined. He must have died before 1895 as he is listed as deceased in the "Official Register . . ." of 1895. Nothing is remembered of his medical work in Waverly.

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*Wright County Eagle, January 4, 1883.
**Wright County Eagle, January 18, 1883.
†Wright County Eagle, March 29, 1883.
‡Delano Eagle, July 28, 1887.
#Delano Eagle, February 2, 1888.

(To Be Continued)

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Wallace Laboratories, Cranbury, New Jersey

PROBLEMS FACING MEDICINE

F. J. L. Blasingame, M.D.
A. M. A. Executive Vice President

Medical society executive secretaries and administrators met recently in Chicago. Common problems as well as new ideas, techniques and endeavors for improving the internal and external affairs of medical organizations were discussed by those who attended. One of the featured speakers who attended was Doctor F. J. L. Blasingame, Executive Vice President of the American Medical Association. In his address Doctor Blasingame outlined the critical decisions facing medicine today. The following is a condensation of his remarks:

"When I addressed the AMA Institute last year, I pointed out that the AMA gains its strength from two principal sources: establishing and promulgating high ethical standards and a stout scientific program. (Other) activities only gain significance to the degree these principal purposes are carried out. I indicated that our primary duty is in serving the individual physician so that he in turn may better serve the public. I listed ten problems facing the AMA and this year I should like to focus on some of these and other specific problems that need special attention.

Struggles between groups of physicians.

"(1) Surgeons versus Surgeons—Most of you have read or witnessed the fight for recognition between groups of surgeons. The American Medical Association was involved in this situation, and approximately 2,500 surgeons attended the meeting of the section on surgery during the recent Annual Session. The American College of Surgeons and many surgeons who possess certification by the American Board of Surgery or other similar Boards opposed the creation of the Board of Abdominal Surgery. As you recall, the 'abdominal' surgeons did elect officers to the section. At the same time, the House of Delegates of the American Medical Association concurred in the recommendation of the Council on Medical Education and Hospitals that there was no need for a Board on Abdominal Surgery and that one should not be established.

"The fight within the section has caused considerable interest in the role of sections of the American Medical Association; and a special committee of the Board of Trustees is now studying the role of sections and is scheduled to make a report in December of this year.

"In my judgment, only the American Medical Association, representing the majority of physicians, must be able to study objectively and play a key role in solving the problems involved in the establishment of new specialty Boards.

"(2) Surgeons versus General Practitioners—Considerable discussion has taken place during the past year regarding the compensation of assistants in surgery. You recall that the American College of Surgeons contended that the American Medical Association, by virtue of the action of its House of Delegates last year in New York, had retreated from its former position so far as its code of ethics was concerned and that the new position, according to the interpretation of the American College of Surgeons, made it more difficult to detect fee splitting. The American Medical Association in turn made it clear that it felt that there had been no retreat, that it was in no sense endorsing fee splitting, and that the new policy was an improvement and properly in the public interest. We are not married to any given set of words. Is there need for clarification?

"Related to this discussion is the debate regarding the qualification which a physician should have before being considered competent to perform surgery. This contention relates in large measure to the amount of formal training. One group appears to contend that it is necessary to have prescribed formal training consisting of an internship and a formal residency of approximately three years in an accredited surgical residency program before being able to perform surgery. On the other hand, a large body of physicians feel that individual competence as measured at the local level should be the basic criterion. This group seems to feel that the apprenticeship continues to have a place in training an individual to do surgery, at least to a limited degree.

"Thoughtful physicians need to continue to discuss the issues involved and attempt to devise mechanisms so that the public may obtain the highest quality of surgical care at reasonable cost. It is essential to see that all physicians doing surgery practice within their limits of competence and that the services be as economically rendered

Continued

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INDIANAPOLIS, INDIANA
Wednesday, November 7, 1962
The Marott Hotel

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Sunday, November 11, 1962
The Disneyland Hotel

KNOXVILLE, TENNESSEE
Thursday, November 15, 1962
Hotel Andrew Johnson

PHOENIX, ARIZONA
November 18, 1962
Westward Ho Hotel

NEW CITY, NEW YORK
Wednesday, November 28, 1962
Dellwood Country Club

LOS ANGELES, CALIFORNIA
November 29, 1962
Ambassador Hotel

GRAND RAPIDS, MICHIGAN
Saturday, December 1, 1962
Pantlind Hotel

NORFOLK, VIRGINIA
December 6, 1962
Golden Triangle Motor Hotel

DENVER, COLORADO
Sunday, January 13, 1963
The Cosmopolitan Hotel

FORT SMITH, ARKANSAS
Tuesday, January 15, 1963
The Holiday Inn

PORTLAND, OREGON
Thursday, January 31, 1963
The Sheraton-Portland Hotel

ANCHORAGE, ALASKA
Saturday, February 23, 1963
The Anchorage Westward Hotel

DETROIT, MICHIGAN
Wednesday, February 27, 1963
The Sheraton-Cadillac Hotel

WILMINGTON, DELAWARE
Saturday, March 9, 1963
Delaware Academy of Medicine

HUNTSVILLE, ALABAMA
Thursday, March 14, 1963
The Russel Erskine Hotel

FARGO, NORTH DAKOTA
Saturday, March 16, 1963
The Frederick Martin Hotel
(Moorhead, Minn.)

BELLINGHAM, WASHINGTON
Saturday, March 23, 1963
The Hotel Leopold

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as possible and widely available to society. The American Medical Association again is, in my judgment, the proper organization to formulate ethical standards and to mediate any differences in interpretation of these standards. There is little to be gained, and possibly much to be lost in debating this issue in the public press and leading to confusion in the public mind.

"The general practitioner is important in the scheme of things, and it is essential that the AMA assist in clarifying his role.

"(3) Academicians versus Practitioners—We have had this struggle with us for a number of years. It varies in severity from place to place but exists in some measure in every locality in which a medical school is situated. This subject was recently discussed by the Board of Trustees, and it was the consensus that the problems are of such dimension and so widespread that consideration be given to continual review through the establishment of a special advisory committee to make suggestions as to how the Council on Medical Education and Hospitals and perhaps other segments of the American Medical Association might develop an effective mechanism for reviewing differences which appear to be serious between the teachers and researchers on one hand and the practicing physician on the other.

"Some physicians who are in full-time teaching or research appointments appear to be more liberally inclined in their philosophical outlook than most private practitioners. Some jealousies appear to exist because those physicians in teaching and research feel that their compensation is inadequate in proportion to their value to society as compared with the practitioner. The practitioners appear to feel that the academicians are in a world apart, live in ivory towers, and keep their dreams 'up on cloud 9.' Suffice it to say, the American Medical Association is the group which can and should assist in bringing about a method that will promote understanding between these essential parts of the profession.

"The differences between these groups have been exaggerated in recent months during the legislative struggle. Many full-time faculty members appear to favor the larger role of the federal government in financing construction, scholarships and loans to students, and a subsidy for teaching purposes. In contradistinction, a higher percentage of private practitioners appear to oppose the use of federal funds for such purposes.

"In many communities, it is believed by some physicians in private practice that the faculties of medical schools have an unfair competitive advantage in terms of the prestige afforded by appointments in the medical school. These physicians have available the resources of good physical equipment to assist in the diagnosis and treatment of patients as compared to those facilities and circumstances available to many individual practitioners.

"While we expect physicians to behave as human beings, let us hope that promotion of understanding between them will assist them in behaving as intelligently as possible.

"(4) The American Medical Association and the related professional, scientific, and service personnel—Great problems face us in this area. They cannot be ignored by the AMA, and no other organization in medicine is equipped to serve the public and the professional interest in relation to these other groups as is the American Medical Association. As you know, they number about nine times the size of the physician population. These groups, working with the profession, assist in ministering to the health needs of the public. The public and these co-workers have a right to look to the medical profession, and more specially to the American Medical Association, for leadership and for guidance.

"No specialty group in the United States has the capacity for solving these problems independently. Tensions exist between specialty groups and certain segments of the allied health professions which make it almost impossible to expect a constructive relationship to be maintained.

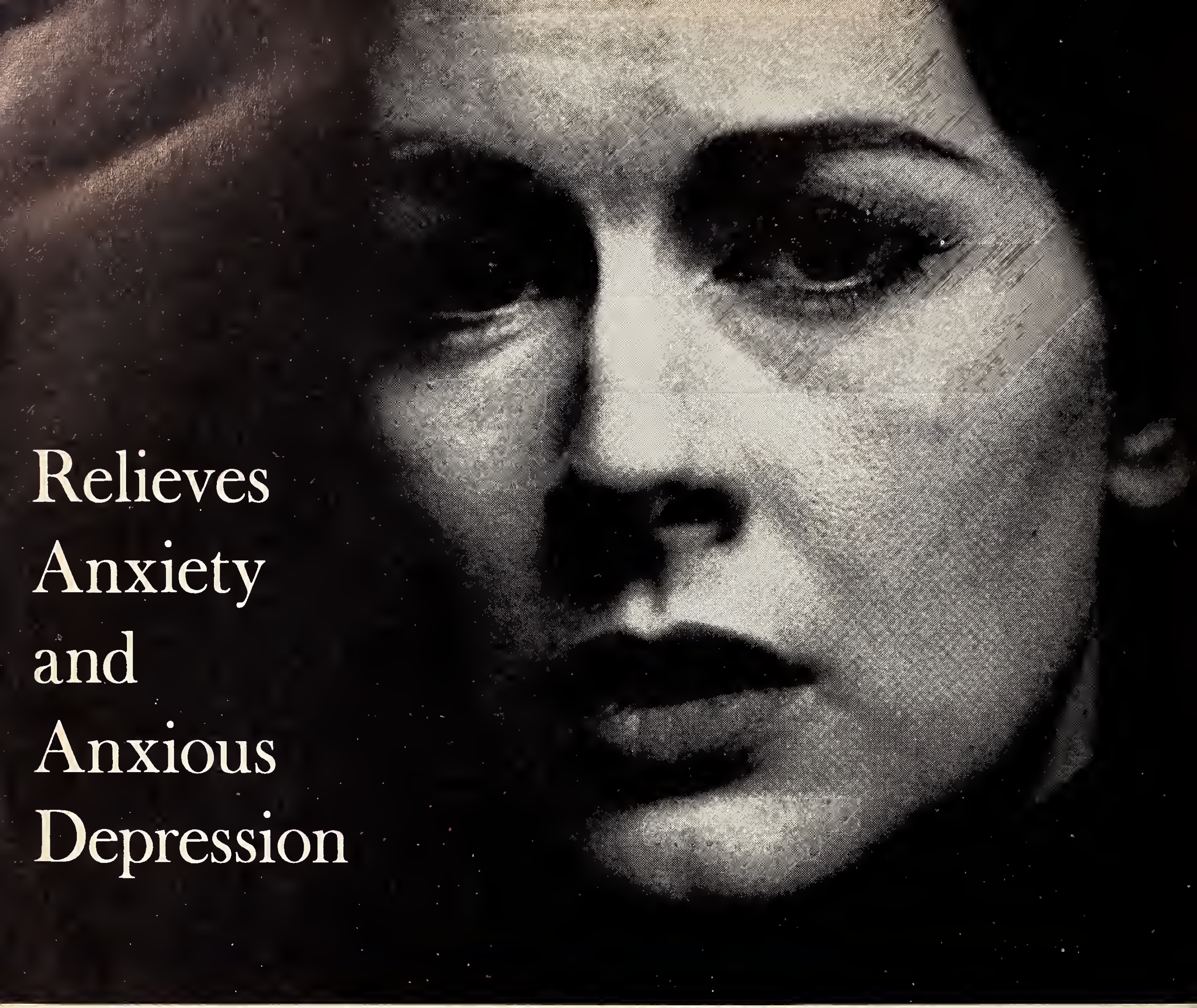
"By adroitly working with these groups on scientific programming, educational requirements, and other non-controversial area, I believe that a great deal of progress can be made to bring them closer to the medical profession in an atmosphere of mutual respect resulting in a better quality of medical care to our citizens.

Insurance against high cost illness.

"It has been said that the use of the insurance mechanism by the American people has been one of the main reasons that socialization of medicine has been avoided in this country.

"Yet, there is reason to believe that it is time that we re-examine that which is expected of insurance as applied to health care. For example, is it realistic and prudent to consider insuring the first dollar cost? Does our attempt to do so

Continued



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actually create a built-in tendency to abuse insurance; does the handling of these small charges increase the cost of insurance beyond that which is reasonable; and does it retard its extension to cover the more serious illnesses?

"There are those who believe that the AMA should consider the possibility of assisting in the development of a system for post-payment of the first dollars—up to $250.00 or $500.00 when necessary—and covering the remainder by insurance or prepayment arrangements so that an individual may be adequately covered to five, ten, fifteen thousand dollar levels through a catastrophic type of insurance. By doing so, could our insurance costs be reduced?

"What can we do to extend coverage in facilities outside of the hospital so as to cut down the use of general, medical-surgical beds for diagnostic procedures and minor illnesses?

"I am aware that leaders in labor and others have contended that comprehensive coverage is 'the desire' of the citizens of the United States. I question whether much of this attitude is artificially created rather than a genuine desire. I believe that the American people are smart enough to understand that they cannot long expect to purchase policies that tend to lead to abuse and misuse.

"Would it be advisable for us to explore with the banking and insurance communities the establishment of mechanisms that might be employed in this area? Does the service concept which has been tried for a number of years have a built-in source of friction between the practicing profession and those who would manage or maintain such a program?

"Historically, such has been the case in many areas of our country. Is it true that this service mechanism is more realistically a protection against government intervention than the method of post-payment and catastrophic coverage or indemnity coverage which we see widely used by other segments of our population? What is the evidence?

"There is much talk about comprehensive coverage, though its definition tends to be vague. Is it a practical desirable objective? Is there a danger that the comprehensive approach, with its built-in weaknesses and high cost, will invite financing through a compulsory form of taxation and a compulsory management of a program by the federal government?

"These are decisions which medical sponsored prepayment plans must contemplate and state medical associations should encourage. Wise men must give of their best thinking to assist the public in coming to acceptable policies that will be in the long range interest of the citizen and assist him in utilizing his earnings and savings in a way in which he can obtain adequate medical care in a climate of personal freedom.

"The American Medical Association cannot look upon these problems with a casual attitude but must develop a high degree of knowledge and concern in this important area.

Hospital Costs.

"Historically, hospital costs have risen in a dramatic fashion in recent years; and many authorities in the hospital field predict a continuation of this upward trend.

"The medical profession cannot ignore this trend. Some question whether these rising costs are absolutely necessary and if the causes should not be immediately and seriously examined. I am inclined to feel that some of the burden for diagnostic work could be transferred to the office of the physician or to a type of diagnostic facility which would avoid much of the cost involved when admitted to general medical-surgical hospitals for relatively minor illnesses or for diagnostic purposes. The stress that hospitals are now experiencing — the increase in labor and other costs — is having a serious impact on the cost of Blue Cross and hospitalization insurance, leading them to search for new sources of income. This search has prompted certain of the leaders in Blue Cross to propose direct subsidy from the United States government.

"As Blue Cross and hospitalization insurance expand, there is the real possibility of further expansion of medical services in hospitals, including out-patient care, the absorption of other specialties. We have already observed the attempt to categorize the services of pathologists, radiologists, anesthesiologists, and psychiatrists as in-hospital services.

"Each physician, in the care of his patient, must keep in mind the cost of every order which he writes whether in or outside of the hospital. The American Medical Association needs to exert its influence in this direction to encourage the physicians to be prudent in their treatment of patients and in the use of hospital facilities and services.

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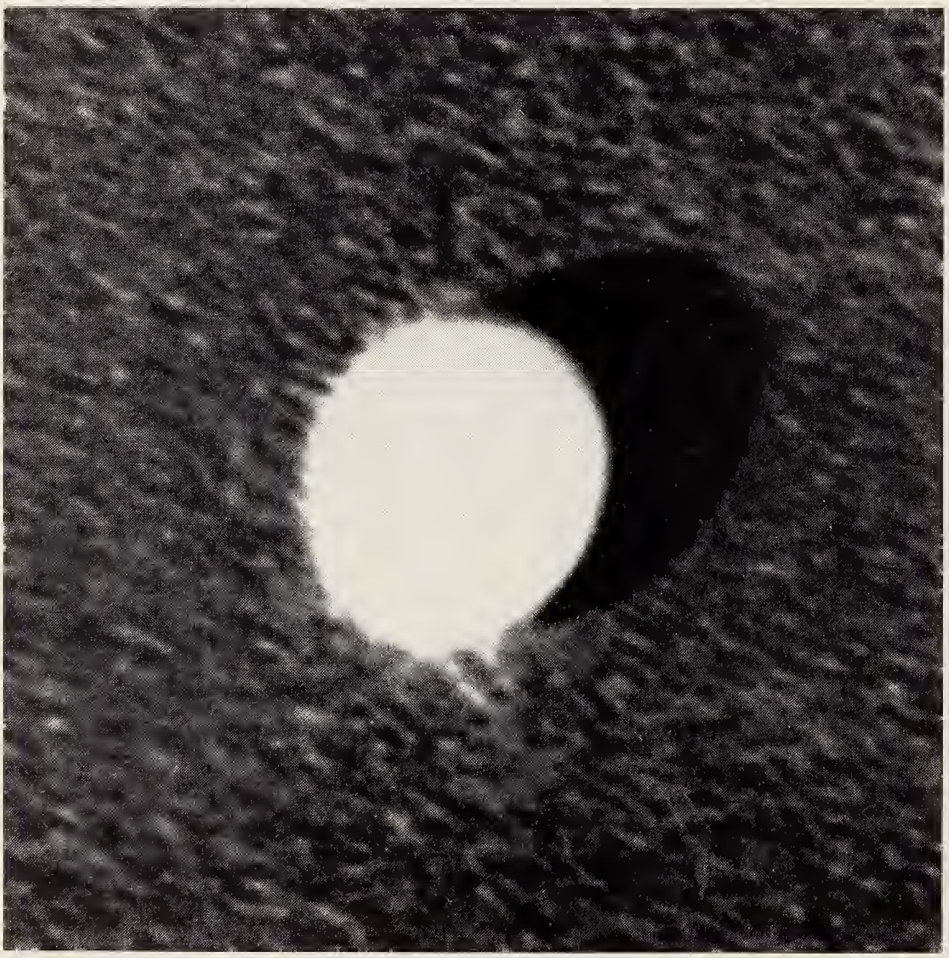

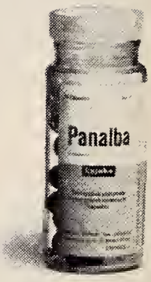

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"The medical profession should cooperate with other segments of the community in seeing that unnecessary frills are not built into hospitals and that hospitals do not compete unnecessarily in establishing a duplication of services in a particular geographical area.

Nursing Homes and Accreditation.

"In connection with the institutional care of patients, I have already made reference to the increase in hospital cost and believe a development which has been taking place in our society is evidence that an economical type of facility has already proved widely acceptable. I understand that approximately 50,000 nursing or rest homes are already in existence in this country and additional ones are being established. These nursing facilities offer a more limited but more economical type of care.

"The medical profession recognizes that the standards of patient care in these institutions in many instances need to be elevated; and one of the big problems currently facing the American Medical Association is the problem of accreditation of non-hospital facilities.

"A large percentage of nursing homes are now being used to care for the chronically ill and the aged. The functions of such a home need to be more clearly delineated and their responsibilities defined.

"The upgrading of services available to the chronically ill in nursing homes would offer more economic facilities for caring for many patients that are presently being cared for in general medical-surgical beds at rates that are higher than are necessary for the problems involved. In working out such a program, a great deal of stress would be relieved from hospitals in certain overcrowded areas and should greatly reduce the over-all cost to the patient and his family.

Political Action.

"I need not remind most of you that the American Medical Association assisted in establishing the American Medical Political Action Committee. This committee has been very active and has assisted in the establishment of similar committees in nearly all of the states. This activity is open and above board. As a matter of fact, we have encouraged wide publicity of this activity.

"The Committee and its staff have done a commendable job; but they have a Herculean task ahead. This project must be looked upon as permanent. The need will extend into the foreseeable future. It will be nothing short of a foolhearted attitude to assume that the battle which we have won in the King-Anderson fight was a battle — an important one; the war continues.

"Compromise — No! Positive programs — are numerous as outlined in AMA testimony before the Ways and Means Committee and President Leonard W. Larson's address to the House of Delegates in Denver last year.

"It is essential that physicians, their families, and their friends work diligently as citizens to press for the selection and election of candidates who are friendly to our point of view. Such cannot be done except by the creation of a proper public understanding and the establishment of a climate at home in the districts and states so that the elected officials will not only find it desirable to vote for our position but rather will find it necessary to do so.

"I want to put in a word of caution that the freedom which we enjoy is still in jeopardy and that we must exercise eternal vigilance and be willing to give of our thoughts, energies, and means to defend our freedom for years to come.

"Let us not be so naive as to look upon our adversaries lightly. They are near us, well organized, and well financed. However, the medical profession has many allies who will assist us and who will take heart in fighting along with us in the over-all battle for personal and individual responsibility, if we, as citizens, offer the leadership.

"Each of us must become familiar with the vocabulary that describes an 'opportunity' society in which freedom of the individual citizen is the most cherished asset. Our fellow countrymen are not as familiar with such a vocabulary as they need be. Too long have they had drummed into their ears the socialist jargon such as 'needs,' 'social responsibilities,' 'security,' and 'welfare.'

Planning.

"I have little faith in a planned society; but I believe that it is necessary to appraise great historical trends and to be a part of them. I have such an estimate of the influence of the medical profession that I am convinced it can make history, rather than drift with it. We can do this by gathering information, by reacting to the facts, and by interpreting and communicating these facts to society in an influential manner.

"We can shape the times in which we live."

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LABOR UNION LOBBYING EXPENSES TOP MILLION DOLLAR MARK

Frequent attacks have been directed toward the medical profession and the American Medical Association that it spends a fortune for lobbying in Washington to influence legislation.

For the year of 1961, the American Medical Association reported to Congress its total lobby expenditures to be $163,404.61. Recently the AMA Legislative Department pointed out that the AMA has made it a practice of reporting fully on its lobbying expenses and its reports include printing and expenditures for pamphlets and other materials which suggests that the reader contact his congressman. Most other organizations do not include this type of expense. Neither in 1959 or in 1960 was the AMA listed among the top lobbying spenders. Generally speaking the AMA has provided the information requested by Congressmen on the Federal level in regard to legislation affecting the practice of medicine or the health of the people of our country. The AMA knows of no other medical society, state or local that employs lobbyists on the federal level or that files a lobbying report.

The following report prepared by Legislative Department, American Medical Association, is based on figures filed with the Clerk of the House of Representatives by labor unions which have registered under the Regulation of Lobbying Act and which are listed in the Congressional Record.

Following the name of the union is a designation as to whether it is a member of the AFL-CIO or is an independent union as listed in the Directory of National and International Labor Unions in the U. S., 1959 (Bulletin No. 1267), published by the Labor Department in December 1959. Unless otherwise indicated, the figure shown includes expenses through the fourth quarter of 1961.

The second half of this report is made up of a list of labor unions which did not register during the year but which had employees who registered as lobbyists.

The total lobbying expense of organized labor comes to $1,010,365.51. Of this amount, the AFL-CIO parent organization and affiliates reported $730,101.97.

Amalgated Association of Street, Electric Railway and Motor Coach Employees of America Inc. (AFL-CIO)	*(a)*	
American Federation of Musicians (AFL-CIO)	$ 22,773.90	
American Federation of Government Employees (AFL-CIO)	600.00	
AFL-CIO	133,919.01	
AFL-CIO Maritime Committee	38,092.31	
America's Wage Earners Protective Conference (AFL-CIO)	4,870.60	*(b)*
Brotherhood of Locomotive Engineers (independent)	8,897.96	
Brotherhood of Locomotive Firemen and Enginemen (AFL-CIO)	43,382.05	
Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees (AFL-CIO)	18,179.72	
Canal Zone Central Labor Union & Metal Trades Council (AFL-CIO)	7,745.16	*(c)*
Division 689, Amalgamated Association of Street, Electric Railway and Motor Coach Employees of America, (AFL-CIO)	*(a)*	
Government Employees Council (AFL-CIO)	25,776.82	
Industrial Union Department (AFL-CIO)	39,694.23	
International Association of Machinists (AFL-CIO)	8,017.87	
International Association of Machinists Lodge No. 44 (AFL-CIO)	71,736.62	
International Brotherhood of Teamsters Chauffeurs, Warehousemen and Helpers of America (independent)	85,522.11	
International Union of Electrical, Radio and Machine Workers (AFL-CIO)	5,855.00	

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National Association of Letter Carriers (AFL-CIO)	66,958.70
National Association of Post Office and General Service Maintenance Employees (AFL-CIO)	9,044.64
National Association of Postal Supervisors (independent)	30,904.84
National Federation of Federal Employees (independent)	51,574.96
National Postal Union (independent) through 3rd quarter	34,350.00 *(d)*
National Postal Transportation Association (AFL-CIO) through 2nd quarter	16,569.45 *(d)*
National Rural Letter Carriers Association (independent)	30,659.78
Order of Railway Conductors and Brakemen (independent)	20,298.14
Railway Labor Executives Association	56,000.00 *(e)*
Seafarers Section, Maritime Trades Department (AFL-CIO) through 2nd quarter	24,098.81 *(d)*
United Federation of Postal Clerks (AFL-CIO)	73,867.83

LABOR UNIONS WHICH DID NOT REGISTER DURING 1961 BUT WHICH HAD EMPLOYEES WHO REGISTERED AS LOBBYISTS

Amalgamated Clothing Workers of America (AFL-CIO) (1 lobbyist)	5,396.01
Amalgamated Meat Cutters and Butchers Workmen of North America (AFL-CIO) (1 lobbyist)	2,754.00
American Federation of Technical Engineers (AFL-CIO) (1 lobbyist)	80.00
Brotherhood of Maintenance of Way Employees (AFL-CIO) (2 lobbyists)	*(f)*
Brotherhood of Railroad Trainmen (AFL-CIO) (3 lobbyists)	55.90
Brotherhood of Railroad Signalmen (AFL-CIO) (1 lobbyist)	*(f)*
Brotherhood of Railway Carmen of America (AFL-CIO) (1 lobbyist)	*(f)*
Building Service Employees International Union (AFL-CIO) (1 lobbyist)	*(f)*
Canal Zone Pilots' Association, Local No. 30, I.O.M.M. & P. (AFL-CIO) (1 lobbyist)	343.39
Commercial Telegraphers Union (AFL-CIO) (1 lobbyist)	*(f)*
Communications Workers of America (AFL-CIO) (3 lobbyists)	35,835.82
International Brotherhood of Electrical Workers (AFL-CIO) (3 lobbyists)	*(f)*
International Ladies' Garment Workers Union (AFL-CIO) (1 lobbyist)	2,568.05
International Longshoremen's and Warehousemen's Union (independent) (1 lobbyist)	5,982.68
International Printing Pressmen and Assistant's Union of North America (AFL-CIO) (1 lobbyist)	20.00
International Union of Mine, Mill and Smelter Workers (independent) (1 lobbyist)	2,901.36
International Union, United Automobile, Aircraft and Agricultural Implement Workers of America (AFL-CIO) (a lobbyist)	7,269.50
International Union of United Brewery, Flour, Cereal, Soft Drink and Distillery Workers of America (AFL-CIO) (1 lobbyist)	895.47
National Independent Union Council (independent) (1 lobbyist)	2,119.71
Retail Clerks International Association (AFL-CIO) (1 lobbyist)	5,955.38
Textile Workers Union of America (AFL-CIO) (1 lobbyist)	1,397.23
United Mine Workers of America (independent) (a lobbyist)	*(f)*
United Steelworkers of America (AFL-CIO) (3 lobbyists)	6,400.00
TOTALS	$1,010,365.51*

*Includes AFL-CIO total $730,101.97

(a) These unions did not list any specific amount for lobbying expenses, indicating that they performed services for their members such as news stories of a legislative nature printed in union publications. It is claimed that these reports resulted in no additional expense.

(b) Although reporting lobbying expenses for all of 1961, the Conference now claims to be inactive.

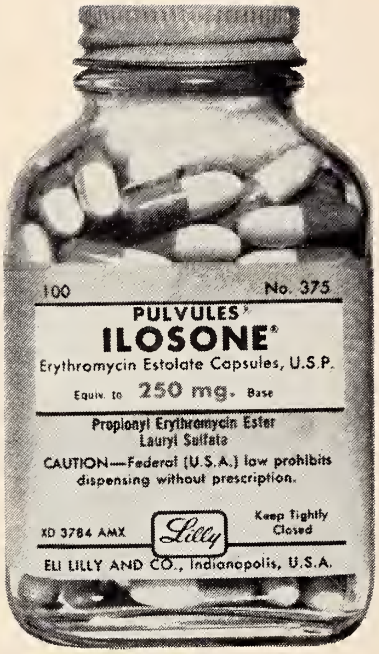
(c) This organization is not listed in the Directory of Labor Unions, but it is a member of the Government Employees Council. CQ lists them as AFL-CIO (Congressional Quarterly Almanac, Volume XVII, 1961, page 961).

(d) According to the File Clerk's Office in the House of Representatives these unions discontinued registration following the listed quarterly report.

(e) This Association is composed of executives of 31 AFL-CIO unions and 2 independent unions. The amount contributed by the independent unions for lobbying activities was $6,052.

(f) Although most of these lobbyists reported receiving funds for lobbying, they reported no expense.

End



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Ilosone® is better absorbed—It provides high, long-lasting levels of antibacterial activity—two to four times those of other erythromycin preparations—even on a full stomach. **Ilosone is bactericidal**—It provides bactericidal action against streptococci, pneumococci, and some strains of staphylococci. **Ilosone activity is concentrated**—It exerts its greatest activity against the gram-positive organisms—the offending pathogens in most common bacterial infections of the respiratory tract and soft tissues.

The usual dosage for infants and for children under twenty-five pounds is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. For adults and for children over fifty pounds, the usual dosage is 250 mg. every six hours. In more severe or deep-seated infections, these dosages may be doubled. Ilosone is available in three convenient forms: Pulvules®—125 and 250 mg.*; Oral Suspension—125 mg.* per 5-cc. teaspoonful; and Drops—5 mg.* per drop, with dropper calibrated at 25 and 50 mg.

This is a reminder advertisement. For adequate information for use, please consult manufacturer's literature.
Eli Lilly and Company, Indianapolis 6, Indiana. Ilosone® (erythromycin estolate, Lilly) *Base equivalent
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Ilosone works to speed recovery

NEW TAX PROCESSING SYSTEM REQUIRES ACCOUNT NUMBERS

The installation by the Internal Revenue Service of an automatic data processing system which uses modern high-speed electronic equipment necessitates the use of numbers in addition to names to identify taxpayers in electronic and other records. In order to give effect to this new system, Congress enacted legislation last year providing for taxpayer-identifying numbers on Federal tax returns and related documents, effective for the tax year 1962 and thereafter. And, in this connection, Congress authorized the Commissioner of Internal Revenue to prescribe regulations requiring taxpayers and payers of income to obtain and use identifying numbers. Such regulations have, in fact, recently been adopted.

Since 140 million Americans already have Social Security numbers, it was decided to use these numbers to avoid the inconvenience of obtaining other numbers. Thus, the account number which an individual will indicate on a return or other related document will also be his Social Security number.

Unless a physician is or was ever an "employee," it is not likely that he will have a Social Security number since doctors of medicine who are self-employed are excluded from coverage under the Social Security system. However, since every person required to make a return, statement, or other document for any period commencing after 1961 with respect to his tax liability, must have an account number, physicians will have to obtain such numbers even though they are not covered under the Social Security system. According to the regulations, application forms for use in obtaining account numbers will as far as possible be furnished without request during 1962 to taxpayers needing numbers. Thus, a taxpayer is not required to file an application for an account number during 1962 unless furnished with an application. A taxpayer who has been supplied with an application form must file it in accordance with the instructions for such form. After 1962, an individual needing an account number must file an application for an account number on either Form SS-5 or Form 3227. An application form may be obtained from any District Director, or any District Office of the Social Security Administration.

An individual engaged in a trade or business is also required to obtain an identifying number which is termed an "employer identification number." For this (and our) purpose, an individual is considered to be engaged in a trade or business if any return is required to be filed by him as an employer (other than a household employer) with respect to his liability for the Social Security taxes imposed under the Federal Insurance Contributions Act and the provisions of the Internal Revenue Code which require an employer to withhold income taxes from the wages of employees. Thus, such an individual may not only have an account number but an employer identification number. And, under the regulations he is required not only to include his account number in the appropriate return, statement or other document but also to include his employer identification number in the schedule provided for reflecting profit or loss from a business or profession.

Obviously, a physician-employer is required to obtain an employer identification number if he doesn't already have one. This is unlikely if he has been an employer for some time. If a number has not been assigned, then application therefore must be made on Form SS-4 to any District Director or any District Office of the Social Security Administration office. Referring to the requirement as to the inclusion of account numbers and employer identification numbers, a physician employer would have to include his account number on his income tax return (or declaration of estimated income tax) and his employer identification number on Schedule C of Form 1040 (Profit (or Loss) from Business or Profession).

An income tax return or a declaration of estimated income tax filed jointly by a husband and wife need include only the account number of the husband. However, a wife's account number must also be shown if, for the taxable year covered by the return or declaration, the wife has (a) separate gross income of $600 or more, or $1,200 or more if she has attained the age of 65 before the close of the taxable year, (b) self-employment income, or (c) income (such as wages, dividends, or interest) paid to her otherwise than with her husband which the payer thereof is required to report on a return or statement of information.

The law and regulations impose a penalty for failure to include the identifying number in any return, statement, or other document, or when otherwise required. The penalty is $5 for each such failure.

End

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FOR DIVERTICULITIS, MUCUS COLITIS,

IRRITATIVE DIARRHEA, IRRITATIVE URETERITIS,

BLADDER SPASM

Trocinate is a musculotropic antispasmodic with no appreciable anticholinergic action. It relieves spasms of the lower bowel and genito-urinary tract by direct action on the contractile mechanism of smooth muscles. The absence of any appreciable action on the autonomic nervous system eliminates the usual side-effects. It may be safely used in glaucoma. Each tablet contains 100 mgs. Trocinate HCl.

Usual Dosage: 2 tablets, 4 times a day. Maintenance dosage is frequently lower.

Dispensed in bottles of 40 and 250 tablets.

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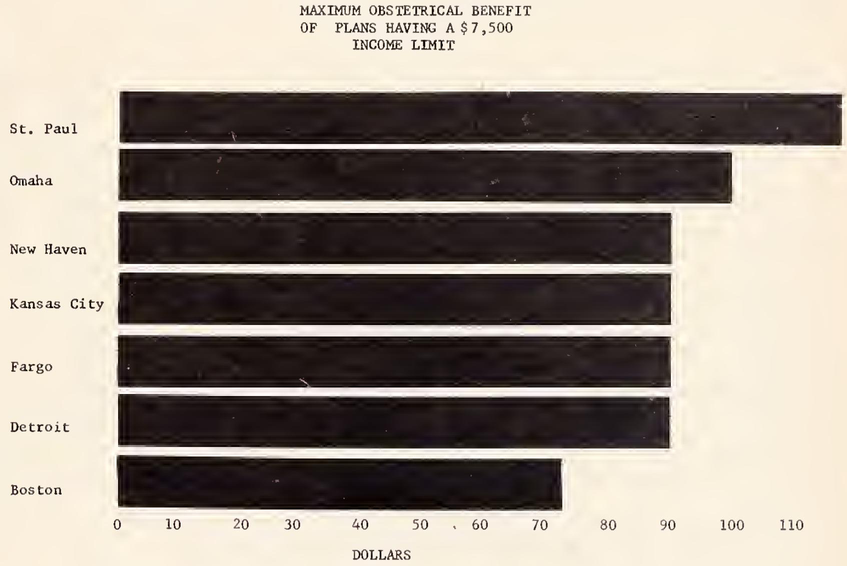

Chart #1 compares the maximum obstetrical benefits of Blue Shield plans in the United States which offer $7500 income contracts. Of seven such plans Minnesota Blue Shield offers the highest obstetrical benefit —$115.

In the last issue of the Journal some visual comparisons between Minnesota Blue Shield and other Plans were made. In light of the Delegates' authorization in 1961 to increase the income ceiling limits of Blue Shield contracts, studies are continuing on the part of Minnesota Medical Service management and the results will be reported to the medical profession from time to time.

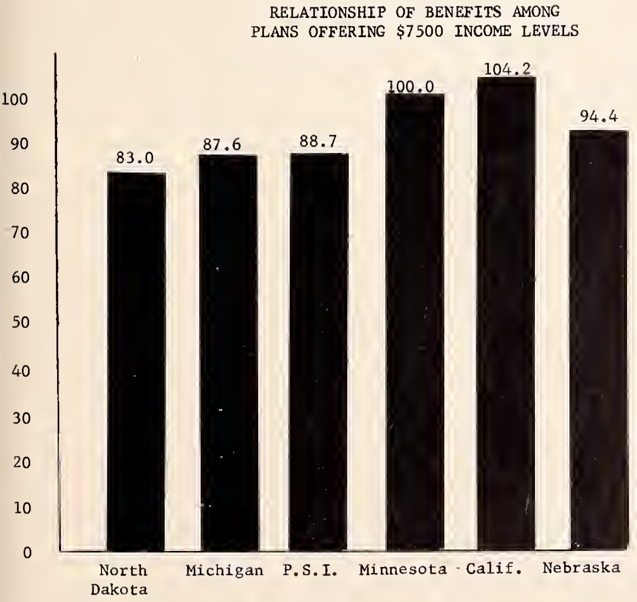

Chart #2 shows the relationship, using Minnesota as the base of 100, of all benefits of six states offering $7500 contracts. Minnesota is exceeded in aggregate benefits only by California.

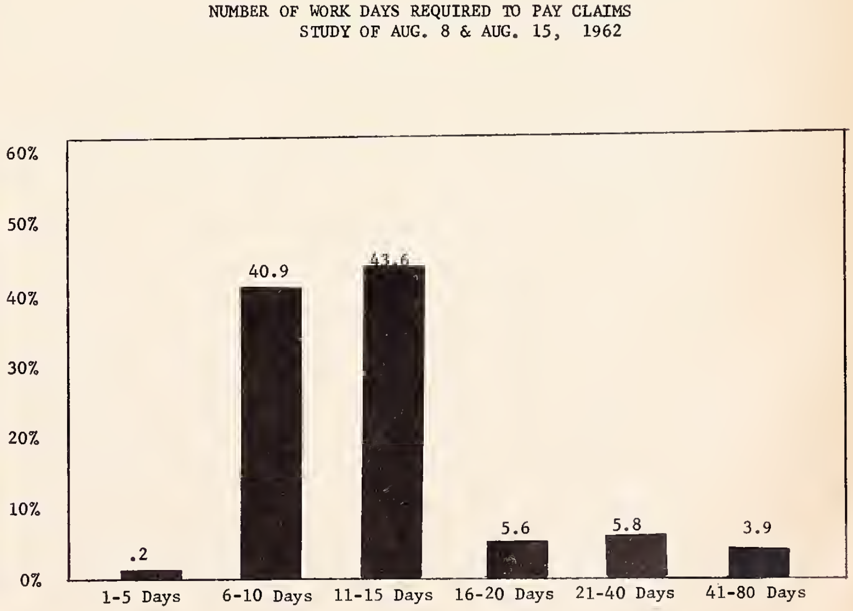

Chart #3 visualizes for the participating physician the number of working days required at Minnesota Medical Service to pay subscibers' claims. Note that the average of time from date of service until a claim is received is 37 days.

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AMERICAN MEDICAL ASSOCIATION

16TH CLINICAL MEETING

Los Angeles
November 25-28

America's fastest growing city plays host to the nation's biggest winter medical session—the AMA Clinical Meeting. For the first time in eleven years, the AMA will present in Los Angeles a complete, comprehensive four-day program featuring the newest advances in medicine.

Planned for every physician, the entire scientific program, scheduled in convenient Shrine Auditorium, offers the most up-to-date "refresher courses" and findings in recent research.

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See JAMA October 27 for complete scientific program, for physician registration and hotel reservation forms.

SPECIAL PROGRAM HIGHLIGHTS
SUNDAY THROUGH WEDNESDAY

Air pollution and pulmonary disease
Viral hepatitis
Clinical nuclear medicine
Depression and suicide
Surgery—general, dermatologic, thoracic and neurologic
Cancer—etiology, pathogenesis, and chemotherapy
Orthopedics
Children's growth disturbances
Cineradiography
Anesthesiology
Forensic medicine
Aerospace medicine
Obstetrics and gynecology
Cardiovascular disease
Viruses
Otolaryngology
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200 Exhibits
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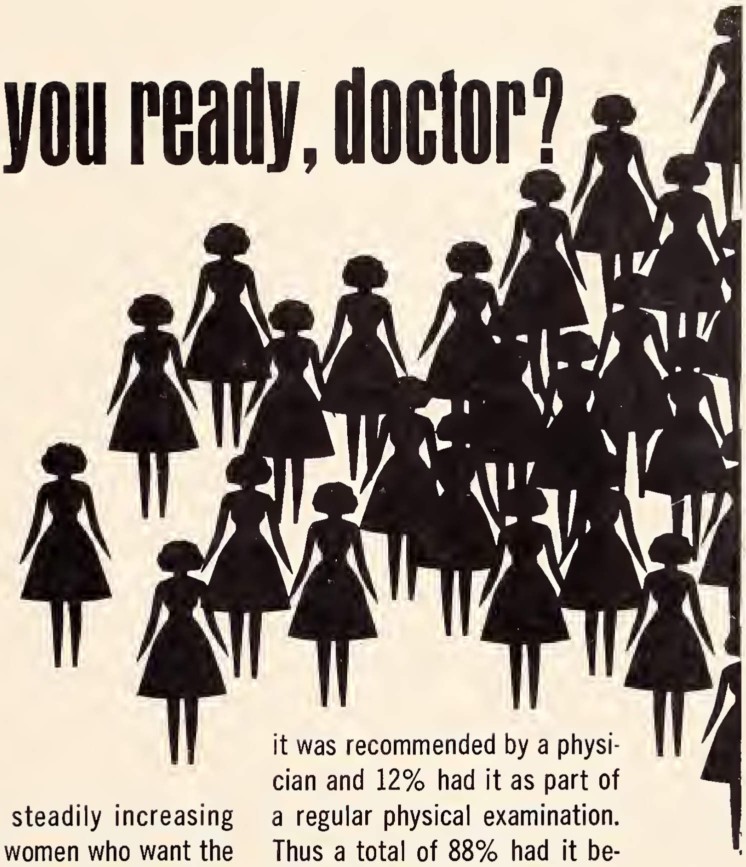
Motion Pictures

WHEN WINTER COMES, "CATCH UP" AT THE AMA CLINICAL MEETING IN CALIFORNIA

are you ready, doctor?



...for the steadily increasing number of women who want the "Pap" smear as part of their regular checkups? By 1961, the number who had this cytologic examination had climbed to an estimated 10,000,000!

While the American Cancer Society's educational program has succeeded in alerting women to the vital importance of the "Pap" smear, it is the physician who plays the key role. This was confirmed in a recent survey of women who had had the "Pap" smear. It was revealed that 76% had it because it was recommended by a physician and 12% had it as part of a regular physical examination. Thus a total of 88% had it because of physicians' actions.

As the number of uterine cytological examinations rises, the death rate from uterine cancer declines. Many authorities estimate that most deaths from this disease could be eliminated if these examinations were routinely performed. More and more women are ready for it and are willing to budget time and money for it. Are you ready for them, doctor?

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Meetings and Announcements

NOVEMBER

American Medical Women's Association will hold a Scientific Session at the Ambassador in Los Angeles on November 29-30. Contact the AMWA in New York City.

American College of Chest Physicians Session at Ambassador Hotel in Los Angeles, November 24-25. Contact: Murray Kornfeld, 112 E. Chestnut Street, Chicago.

AMA COUNCIL on Medical Services Conference, Los Angeles Biltmore, November 25. Contact the AMA-Chicago.

National Society for Crippled Children & Adults Convention, November 16-20, Hotel Fontainebleau, Miami Beach, Florida. Contact: Society, 2023 West Ogden Avenue, Chicago.

DECEMBER

Hahnemann Medical College & Hospital Symposium on "Medical Considerations in the Surgical Patient," December 12-14, Sheraton Hotel, Philadelphia. Contact: Wilbur W. Oaks, M.D., 230 North Broad Street, Philadelphia.

State University of Iowa College of Medicine Postgraduate Conference on Pediatric surgical problems, December 4-5. Write to: John A. Gius, M. D. Postgraduate Medical Studies, College of Medicine, Iowa City, Iowa.

American College of Chest Physicians Course on Occupational Diseases of the Heart and Lungs, December 3-7, Statler-Hilton Hotel in Detroit. Contact: Murray Kornfeld, 112 E. Chestnut St., Chicago.

JANUARY 1963

American College of Surgeons, Section Meeting, January 21-23, Hotel Westward Ho., Phoenix, Arizona. Contact the College of Surgeons in Chicago.

National Fire Protection Association Technical Committee Meetings, Hotel Manhattan, New York City, January 21-25. Contact the Association, 60 Batterymarch St., Boston.

University of Colorado Medical Center, Ninth Annual General Practice Review, January 13-19 at the University. Contact the Office of Postgraduate Medical Education in Denver, Colorado.

ANNOUNCEMEMTS

University of Minnesota medical continuation courses; November 29-December 1 on Cardiovascular Diseases; January 7-11 Introduction to Electrocardiography; January 7-11 Proctology. For further information write 1342 Mayo Memorial, University of Minnesota, Minneapolis.

* * *

The next scheduled Part I examination of the American Board of Obstetrics and Gynecology will be held at various examining centers in the United States on Friday, December 14, 1962. Current bulletins may be obtained from: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

* * *

The American Thoracic Society offers grants for research in respiratory diseases, including tuberculosis. Deadline for applications for the grant year beginning July 1, 1963 is December 15, 1962. Write: American Thoracic Society, New York.

A scholarship of $150 is awarded by the Medical Library Association for each accredited course in medical librarianship which is given in an accredited graduate school of library science. Applications should be made to the school applicant wishes to attend.

* * *

The Association of American Medical Colleges will accept applications from medical students for grants which will enable them to broaden their medical knowledge and know-how by serving at remote medical stations in Africa, Asia and Latin American. Closing date for filing applications is December 31. Instructions and application forms may be secured from the deans of the medical schools.

* * *

American College of Physicians Postgraduate Courses offered:

- November 13-17—"Endocrinology and Metabolism" —John Hopkins Hospital, Baltimore.
- December 3-7—"Psychiatry for the Internist"—University of Southern California, Los Angeles.
- January 21-25—Diseases of the Blood Vessels and Thromboembolism—Cornell University Medical College and New York Hospital, New York.

* * *

Postgraduate conferences on "New Concepts and Therapy in Hypertensive Disease" and "Respiratory Diseases" will be held November 30, at the State University of Iowa College of Medicine, Iowa City. Contact: John A. Gius, M.D., Office of the Dean, College of Medicine, Iowa City, Iowa.

W. B. SAUNDERS COMPANY ANNOUNCES $15,000 WRITING FELLOWSHIP GRANT

To mark its 75th Anniversary in 1963, The W. B. Saunders Company, medical and scientific publishers, are making available $15,000 for an unusual medical writing award. A distinguished committee will select the grantee.

The purpose of this grant is to provide financially for a year's leave of absence for a distinguished investigator who:

(1) Has been doing fruitful and significantly important biomedical laboratory research over the past several years.

(2) Would like to have time for thought and for preparation of his work in monographic form.

Areas of research in the medical sciences and clinical medicine which are acceptable for award consideration are extremely broad with a preference for those which could be translated into clinical usefulness within the foreseeable future. The investigator should be a resident of the Americas; but he may be doing or have done his laboratory work outside the Western Hemisphere.

Applications should be submitted between January 1, 1963, and May 1, 1963, directly to Dr. Robert F. Loeb, care of W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa. A decision on the award-winner will be reached by August 1, 1963, and the recipient notified. Formal presentation will be made at an award dinner in October, 1963.

Physician's Diary

Dr. Alexander Schirger of the Department of Medicine, Mayo Clinic, was the speaker at the recent meeting of the Southwestern Minnesota Medical Society. His topic was "Hypertension and Its Treatment."

* * *

New locations: **Dr. Richard W. Nicholson,** anesthesiologist joined the staff of the Lake Region hospital in Fergus Falls . . . **Dr. Clifford M. Phibbs, Jr.** joined the Oxboro Clinic in Bloomington . . . **Dr. Rodney W. England** has opened an office in the Lowry Medical Arts Building, St. Paul . . . **Dr. Bernard W. Lenz** has joined **Drs. J. E. Ponterio** and **P. J. Adams** at the Shakopee Medical Center . . . **Dr. H. S. Strait** is now associated with the group of doctors at the Glencoe Medical Clinic . . . **Dr. Harry N. Simmond** has left Prior Lake to begin a residency in anesthesiology in New York Belleview Medical Hospital . . . **Dr. Frank V. Sander Jr.** has been elected a partner in the Olmsted Medical Group in Rochester . . . **Dr. Thomas G. Casey** will become associated with **Dr. W. D. Cleaves** in Sauk Centre this month . . . **Dr. A. W. Diessner** of Redwood Falls has begun a practice in Franklin. He will still continue his practice in Redwood Falls . . . **Dr. Owen D. Bolstad** has resigned as medical director of the State Health Department and discontinued his medical practice in Little Falls to accept a four-year residency at the Veterans Administration Hospital in Minneapolis.

Doctors L. A. Laikola and **Donald E. Nealy** are building a new Adrian Medical Clinic.

* * *

The Board of Directors of Community Memorial hospital in Spring Valley announced the appointment of **Drs. C. E. Peterson, Lowell Smythe** and **John Todd** of Austin and **Dr. C. W. Baars** of Rochester to the hospital staff.

* * *

Dr. Reuben Berman of Minneapolis recently spoke on Cardiac Arrhythmias including Cardiac Standstill at the meeting of the Southwestern Minnesota Medical Society in Worthington.

* * *

Dr. Sigfrid A. Muller, a staff assistant at the Mayo Clinic, has been appointed to the Clinic staff in the Section of Dermatology.

* * *

Dr. James R. Thompson of Bemidji has been granted a residency in ophthamology at the Mayo Clinic, effective April, 1963.

* * *

Dr. John L. Emmett, a member of the Section of Urology of the Mayo Clinic, was elected a corresponding member of the British Association of Urological Surgeons.

* * *

Dr. Stephen Rous, a fellow in urology in the Mayo Foundation, was elected president of the Association of Fellows, succeeding **Dr. John Pollard.**

* * *

A new nursing home in Preston has been purchased by **Drs. H. M. Skaug, J. Westrup** of Lanesboro, **J. P. Nehring** of Preston and will be known as the Preston Nursing Home.

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longer
trapped
between
27th and 28th St.
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BROADWAY

Dr. Walter A. Fansler, emeritus professor of surgery, University of Minnesota, was the guest speaker at the 84th annual meeting of the Montana Medical Association at Missoula, Montana, Sept. 13-15. His papers were: "Proctoscopy—A Neglected Diagnostic Procedure" and "Abscesses and Fistulae."

* * *

Dr. Jesse Edwards was elected president of the Minnesota Heart Association to succeed **Dr. John B. Moyer.** Dr. Edwards is chief pathologist at the Charles T. Miller hospital.

* * *

Dr. Conrad W. Baars of Rochester addressed the Tenth International Congress of Catholic Doctors in London, England last July. His topic was "Thomas Aquinas and the Cure of Obsessive-compulsive Neurotics." He also addressed members of the faculty of psychiatry and psychology at the University of Nymegen later that month.

* * *

Dr. Thomas A. Stolee, Edina, has been named assistant medical director for the North Central Home Office of the Prudential Insurance Company.

* * *

Dr. Katherine Nye, St. Paul, was recently featured in a newspaper article in which she reflected her many years of service in the health center's immunization clinic.

* * *

Newly appointed medical staff officers of the Charles T. Miller hospital of St. Paul are: **Dr. Lyle A. Tongen,** president; **Dr. Hugo F. Schroeckenstein,** first vice-president; **Dr. Robert L. Merrick,** second vice-president; **Dr. Philip H. Soucheray,** medical services chairman; **Dr. James R. Ralph,** administrative policy chairman; and **Dr. Frederick M. Owens, Jr.,** education and research chairman.

Dr. George C. Roth of St. Paul has been elected board president of the Ramsey County Tuberculosis and Health Association. **Dr. John A. Culligan** of St. Paul has been named to the board.

* * *

The Mayo Foundation has made thirty-two new fellowship appointments and eleven special appointments.

* * *

Dr. D. L. Jacobs, Lakeland Medical Center of Willmar, attended the recent meeting of the Northern Minnesota Medical Association, and **Dr. E. J. Engberg** superintendent of the Faribault State School and Hospital, attended the first Congress on Mental Illness and Health in Chicago.

* * *

Dr. G. W. Clifford of Alexandria was selected as the first recipient of the "Orchid of the Month" given by the Rotary Club of that city.

* * *

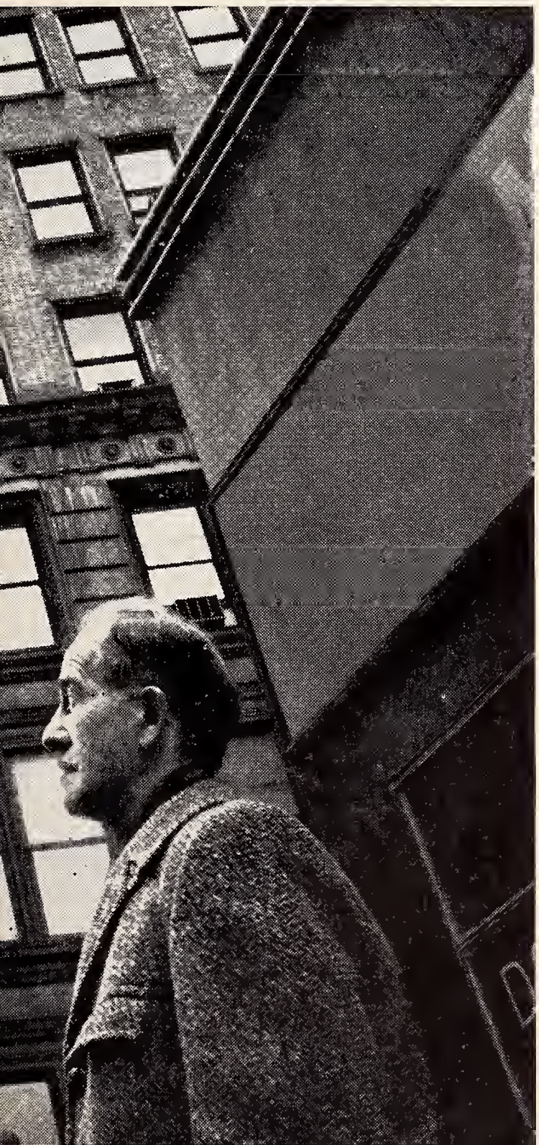
Dr. R. H. Puumala, Cloquet, was elected president of the Northern Minnesota Medical Association last month. **Dr. Josiah Fuller,** Duluth, was elected secretary.

* * *

Dr. Richard A. De Wall, Minneapolis, has been appointed chairman of the department of surgery at the Chicago Medical School. At the same time, Dr. De Wall will assume the post of chief of surgery at Mount Sinai hospital in Chicago.

* * *

Dr. Thomas P. Wetteland, who practices in Dodd-Way center in West St. Paul, was named the new chief of the staff for Riverview Memorial hospital. **Dr. Frank J. Bonello** of St. Paul is the new assistant chief.



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Arlidin is available in 6 mg. scored tablets, and 5 mg. per cc. parenteral solution. See PDR for dosage, packaging.
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1. Murphy, H. L., and Klasson, D. H.: N. Y. State J. Med. 57:1908, 1957.
2. de Crinis, K., Redisch, W., and Steele, J. M.: Proc. Soc. Exper. Biol. & Med. 102:29, 1959.

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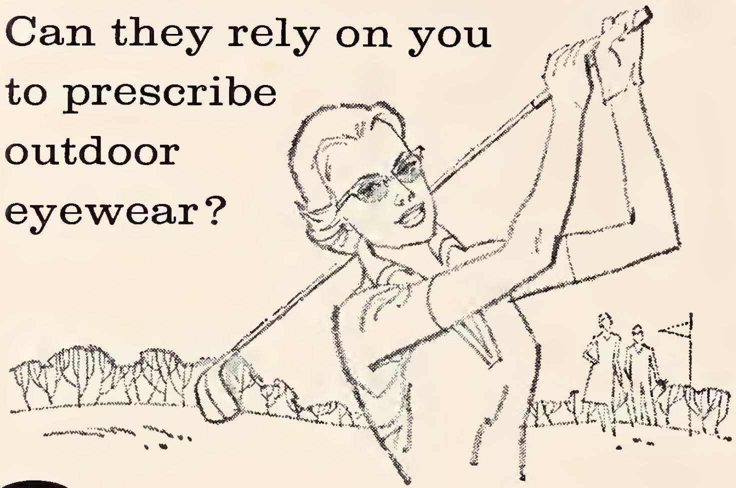

IF NOT, the alternative is clear. They'll be making impulse, spur-of-the-moment purchases from clerk-dispensed or self-serve racks and displays. Absent will be the important considerations of professional eye care, an up-to-date prescription, Rx-ground lenses, personal selection, proper fitting and continuing service. Give your patients the benefit of your *professional* service.

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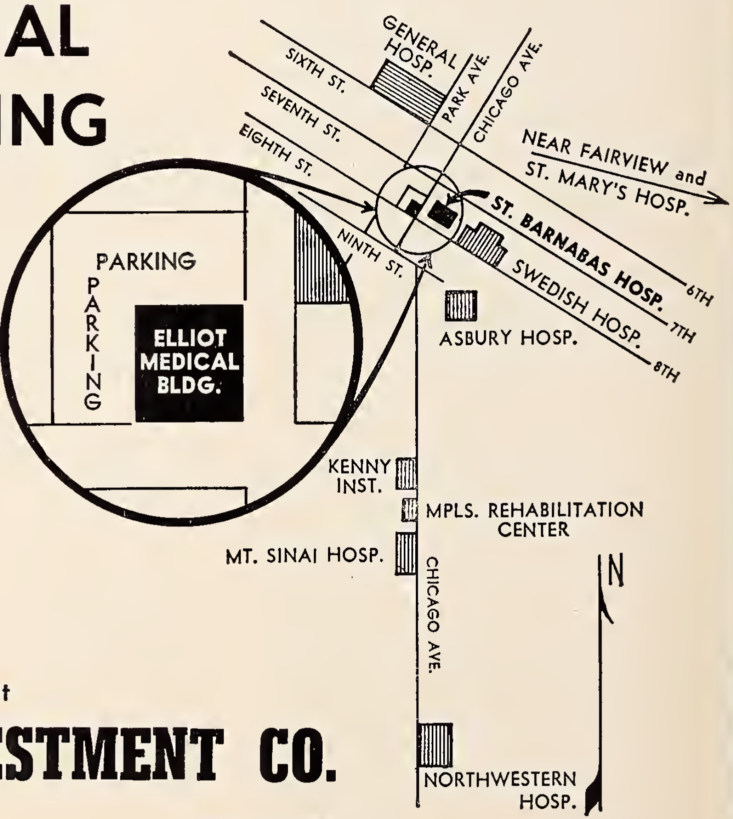
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Classified advertising rates are twenty (20) cents a word; minimum monthly charge $5.00; key number, fifty (50) cents additional. Remittance should accompany order.

WANTED—G. P. to join established 4-man group. City of Lakes. Town of 10,000, Southern Minnesota. Accredited hospital. Salary open. Early partnership. Contact: William M. Feigal, M. D., Lakeside Clinic, Fairmont, Minnesota.

SPACE AVAILABLE — first floor of new medical dental building 26′ x 51′ air conditioned. Five examining rooms and lab; private office and reception room with paneling and indirect lighting. Adjacent parking lot. Available immediately. Contact Dr. Osterbauer or Dr. Emond, 2525 33rd Avenue N.E., Minneapolis. STerling 1-1405.

WANTED: General surgeon by established four-man group in own building, fully equipped. Southwestern Minnesota — county seat — population 3,500. New hospital —fine churches — good schools, public and parochial. Golf clubs — grass greens. Hunting and fishing. Starting salary with opportunity for partnership. No initial investment necessary. Write: Box 199, care of MINNESOTA MEDICINE, St. Paul.

ASSOCIATE WANTED — internist or general practitioner to associate with general surgeon. Community of 3,500 population with excellent hospital facilities, churches, public and parochial schools and county seat. 40 miles west of Minneapolis. Write Box 210, care of MINNESOTA MEDICINE, St. Paul.

GENERAL PRACTITIONER—excellent immediate opening here for general practitioner physician on independent basis in local clinic. Seven-room, furnished clinic adjoins new, 22-bed hospital. Attractive rental figure. No investment needed. Hospital city. Will share clinic operating costs with present physician. Anesthetist. To replace physician recently left to specialize. Furnish references, credentials. Call or write Marvin Lawrence, Heron Lake, Minnesota. 79 3-2327

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In Memoriam

ERIC G. HOWARD

Dr. Eric Graham Howard, 55, general practitioner in Spring Valley, died September 6, after about a year's illness. He was born in Johannesburg, South Africa of missionary parentage, and after securing a student visa, he came to the United States where he received his degree in medicine from the University of Minnesota.

Dr. Howard interned at Santa Barbara, California, and practiced in South Africa, Mapleton, Minnesota and Hayfield, Minnesota. He served as a Navy doctor during World War II in both the European and Pacific theaters. He was a member of the Zumbro Valley Medical Society, Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife, two daughters and a son.

ANDREW GULLIXSON

Dr. Andrew Gullixson, 88, retired pediatrician, died July 1 at Veterans Administration Hospital in Minneapolis. He was born in Delano Township in Iowa and received his degree in medicine from Rush Medical College in Chicago.

He was a 50 Club and Life member of the Freeborn County Medical Society, Minnesota State Medical Association and the American Medical Association. Dr. Gullixson was also a member of the American Legion and Veterans of Foreign Wars. He practiced in Albert Lea, Minnesota for many years and upon his retirement moved to Minneapolis.

He is survived by his wife and one daughter.

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References: (1) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* **10**:694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* **11**:392, 1960.

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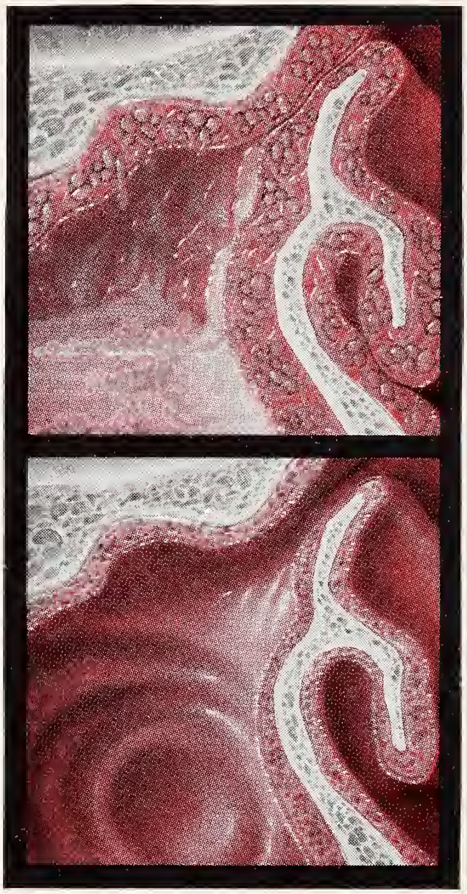

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Bibliographical references should be limited to twelve and should be typed in conformity to the method used by the Quarterly Cumulative Index. They should be numbered consecutively in the order in which they first appear in the text. Book references should give the name of the author, title, edition number, publisher, and the year.

Illustrations (photographs, tables, and graphs) should be submitted on separate sheets of paper and not combined in the text. Instructions for combining photographs are acceptable.

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President's Letter

In concluding a year as president of the Minnesota State Medical Association, I have many thoughts and impressions that I should like to express. These are not new, yet to me they have gained a new significance because of my recent proximity to Minnesota physicians and to those who work in the offices of our state association.

Paramount among these impressions is that of the great importance of work done by physicians in the area of organizational medicine. The time and energy required in the practice of medicine make it difficult for a physician to pursue such work. Moreover, one might point to the superb accomplishments by Minnesotans in the quality of practice, in excellence of teaching and in research investments. One might ask, Are these not the essence of our success and the basis for a future projection of our professional contribution? They are indeed, yet the practice of medicine is continually beset by those who would radically change it, by those who would limit the liberty of patient and physician alike and cause their agelong interpersonal relationship to deteriorate. Taking pride in medicine while neglecting the sociologic and political vectors of medical practice could nullify our accomplishments.

Another impression I have gained concerns the work load that is being carried effectively in the office of our state association. Most of our county medical societies rely heavily upon the services of our state office. The American Medical Association, while giving great leadership in matters of policy, ethics, and professional and public education, is nevertheless considerably removed from many specific problems of a state constituency. Those in our state office are often called upon to implement the action of the House of Delegates, of the Council and of our many committees.

Our state office is concerned with the day-to-day public relations, the communications, the annual meeting and other meetings, and the records of our association. Every day the medical profession of our state meets at many levels those paramedical and other professions that deal with many facets of medical practice — those concerned with hospitals, the nursing profession, insurance, education, pharmacy, safety, and other healing arts. We must effectively represent the highest concept of medicine as these organizations bring problems to us. In legislative and judicial matters as well as in the application of existing laws to medical practice we have continuing problems that warrant our having the best legal counsel our organization can secure.

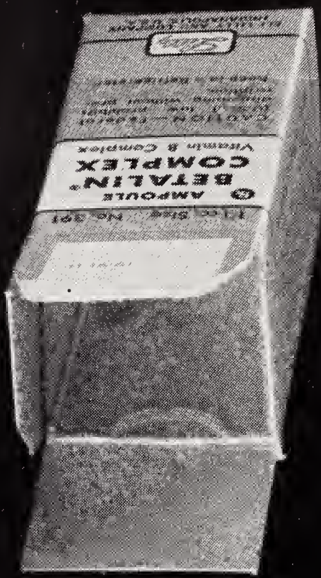
In addition to the physicians of our state organization, there are other dedicated persons whose work formulates that mosaic which becomes our public image. These include our executive secretary, field secretary, office manager, legal counsel, and a physician adviser in the state legislature, as well as numerous clerks and secretaries. Likewise, this image is greatly enhanced by our publication, *Minnesota Medicine*, an increasingly valued and respected journal. Much thought and diligent care by the efficient editor, his associates and his staff have gone into recent changes in the format of this journal. These make it, indeed, one of the foremost state journals now available.

To have served as your president during this year has been a privilege. I leave office with an increasing awareness of the dedication and capacity of those in our organization. Again, I thank each of you for the honor accorded me.

Yours sincerely,

Haddon Carryer

HADDON CARRYER, M. D.
President
Minnesota State Medical Association



the case of the missing ampoule

People aren't perfect—neither are machines. Both can slip up occasionally. Take an ampoule in a paper carton for example. How can we be absolutely sure that the ampoule is really inside? ■ Here's how: A machine folds the carton, inserts the ampoule, seals the carton, and then places it on the finishing line. Further down the line, the detective waits—a jet of air sweeping across the finishing line just strong enough to blow an empty carton off the belt. Properly filled cartons proceed for further inspection and packaging. ■ Perhaps a small point, but it is another in a long series of control measures designed to deliver quality pharmaceuticals every time.

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Prophylactic Oophorectomy

with Carcinoma of the Rectum and Colon*

LLOYD F. SHERMAN, M. D.
ROBERT J. TENNER, M. D.
WAYNE A. CHADBOURN, M. D.
Minneapolis, Minnesota

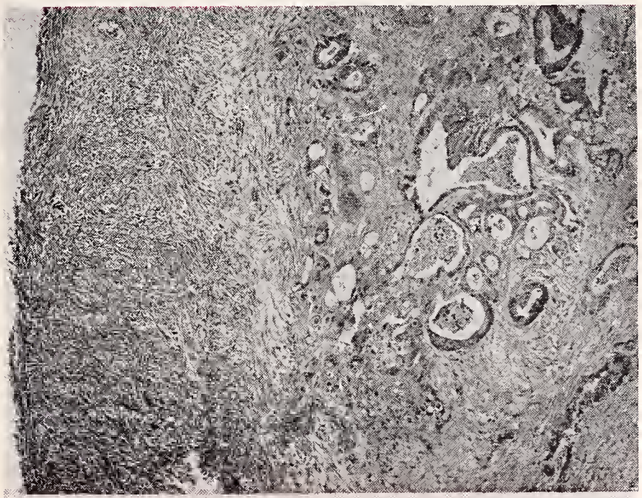

Figure 1. An example of ovarian metastasis from primary adenocarcinoma of the rectum and colon (Case #8). Prophylactic oophorectomy reveals hematogenous implantation in the body of the ovary.

GYNECOLOGISTS HAVE for some time been aware of the secondary implantation of cancer in the ovaries from carcinoma of the rectum and colon. Because of this they recommend preoperative proctoscopy and barium enema studies where ovarian malignancy is suspected, or they search the colon at the time of pelvic laporotomy if these studies have been omitted.[7, 11]

It is our impression that many surgeons doing rectal and colonic resections for carcinoma in this area are not duly impressed with the need for this caution, and that therefore the incidence and fatality from this frequent site of carcinoma metastasis have probably been overlooked.

Unfortunately the medical literature is confusing in not clearly defining the much-discussed though little-understood Kruckenberg metastasis, which is usually secondary to gastric carcinoma and less frequently to rectal and colonic lesions. It is thought to originate from serosal rather than from hematogenous implantation. The histologic pattern of Kruckenberg metastasis is characterized by the presence of epithelial cells occurring as well-marked acini, always showing varying degrees of mucoid change. At times only occasional shadows of the original gland formation remain in a mucinous and myxomatous field. This characteristic appearance has been called carcinoma mucocellulare. Oophorectomy offers little salvage in these cases.

---

* Read before Minnesota Surgical Society, Rochester, Minn., May 4, 1962.

The carcinomatous metastasis in the ovaries that we are concerned with retains the well-preserved glandular pattern of the adenocarcinoma of the rectum and colon. Though the ovaries usually retain intact serosal surfaces, they nevertheless become the susceptible recipients of fairly frequent and often fatal hematogenous implantation from adenocarcinoma of the rectum and colon.

Burt,[4] in 1951 and again in 1960,[5] recommended bilateral salpingo-oophorectomy concomitant with resection of the carcinomatous bowel. In his series of 493 patients with large bowel carcinoma, 18 had secondary deposits in the ovary, an incidence of 3.5 per cent; and in 13 of these the ovary presented the only gross evidence of metastasis from the bowel lesion. The bowel cancers were not confined to any segment of the colon. The average ovarian lesion was detected 10 months after the primary resection. Onset was insidious and rate of growth rapid, only one patient surviving for five years.

For a number of years, Brunschwig has routinely performed bilateral oophorectomy in all female patients with cancer of the gastro-intestinal tract; likewise, Deddish and Stearns[6] have advocated bilateral oophorectomy for all patients with cancer of the rectum and left colon. They have found the incidence of ovarian metastasis to be eight per cent. Of 28 females with Dukes' C lesion, ovarian involvement was demonstrated in 18 percent. These investigators further felt that ovarian metastasis was a significant finding, and that the removal of the ovaries added substantially to the palliation of the patient.

For the past 10 years Bacon has advocated prophylactic oophorectomy concomitant with colon resection for cancer. He feels that oophorectomy would eliminate the source of a second primary site, as well as remove a frequent site for secondary metastasis. In his series 11 per cent of women with multiple primary neoplasms had primary ovation cancer. Speert[10] believes that the chance of a woman over 40 dying of primary ovarian cancer is greater than one per cent. This incidence is increased with metastatic lesions arising from carcinoma of the large bowel. Therefore he recommends prophylactic oophorectomy for most patients over 40 undergoing pelvic surgery.

Rendleman and Gilchrist[9] acknowledge that the ovary is a not-infrequent site of metastasis from gastro-intestinal carcinoma, and suggest the following indications for bilateral oophorectomy at the time of bowel resection for primary cancer as a means of increasing survival rates:

1. When the ovary or uterus is adherent to the bowel containing the primary tumor.
2. When one or both ovaries appear grossly abnormal.
3. When the ovaries appear grossly normal but the primary tumor has invaded the serosa of the bowel, or when there are peritoneal implants.
4. When a palliative resection is performed in the presence of metastasis or other evidence of widespread disease.

When these criteria were used in 102 female patients, none required a secondary operation after removal of asymptomatic ovarian metastasis, in comparison to 13 Patients who developed secondary ovarian metastasis in a similar preceding series.

Clinical Material

Our experience consists of a series of 400 patients with carcinoma of the colon and rectum that were resected during the last nine years, from July, 1953 to January, 1962. Of this group of patients, 162 were female. Eight of the female patients (5%) with primary carcinoma of the bowel had concomitant or subsequent ovarian metastasis. Three patients had gross or microscopic evidence of ovarian metastasis at the time of the primary resection and probably more significant, two patients had histologic involvement of normally appearing ovaries that were resected prophylactically. Only one of the eight patients presented gross evidence of other intra-abdominal metastasis. Six of the eight patients expired of adenocarcinomatosis coincident to ovarian metastasis, within approximately one year after the primary bowel surgery. Two of the eight patients have survived five years.

Case Reports

Case No. 1

L. K., female, age 30. Semi-obstructing adenocarcinoma of the cecum, with palpable mesenteric lymph

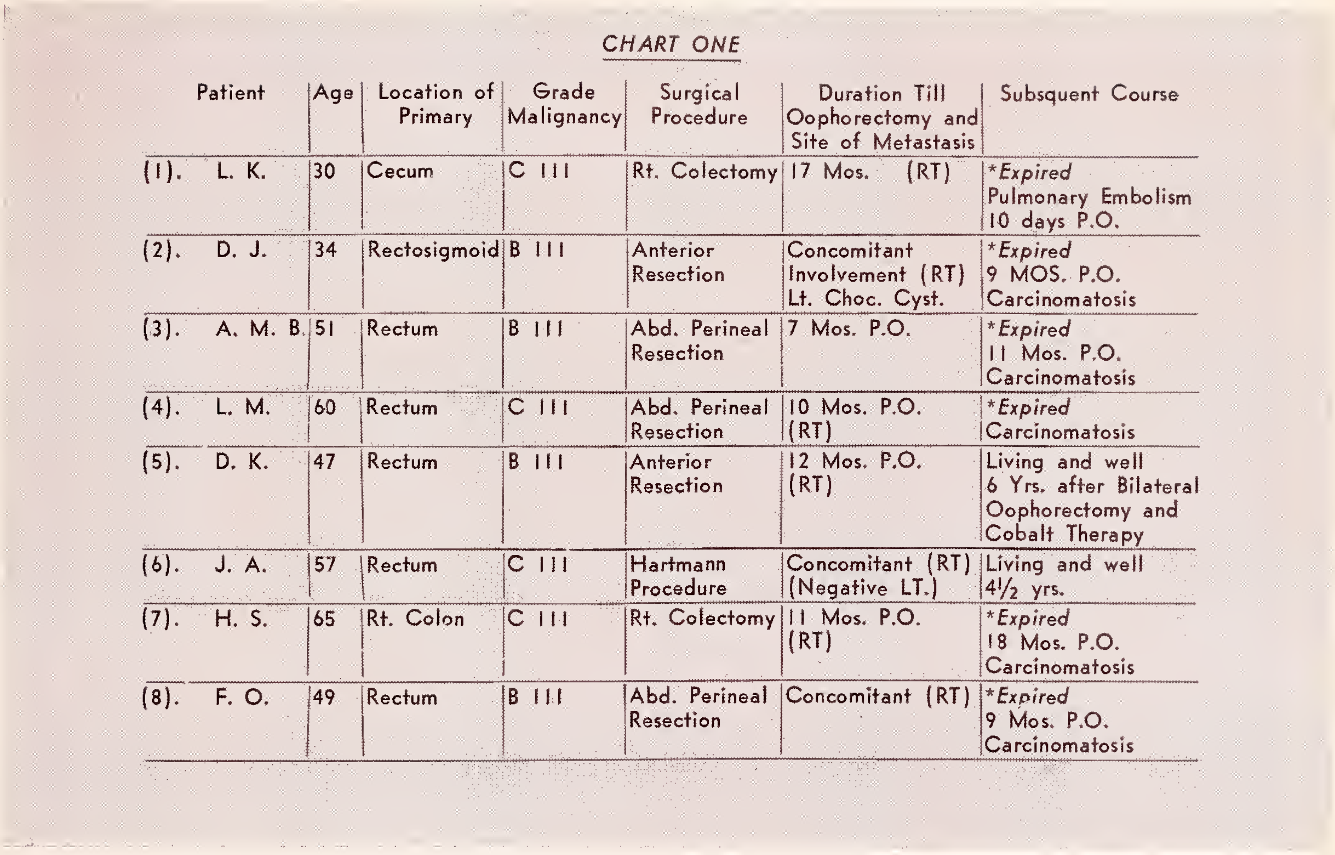

CHART ONE

	Patient	Age	Location of Primary	Grade Malignancy	Surgical Procedure	Duration Till Oophorectomy and Site of Metastasis	Subsquent Course
(1).	L. K.	30	Cecum	C III	Rt. Colectomy	17 Mos. (RT)	*Expired Pulmonary Embolism 10 days P.O.
(2).	D. J.	34	Rectosigmoid	B III	Anterior Resection	Concomitant Involvement (RT) Lt. Choc. Cyst.	*Expired 9 MOS. P.O. Carcinomatosis
(3).	A. M. B.	51	Rectum	B III	Abd. Perineal Resection	7 Mos. P.O.	*Expired 11 Mos. P.O. Carcinomatosis
(4).	L. M.	60	Rectum	C III	Abd. Perineal Resection	10 Mos. P.O. (RT)	*Expired Carcinomatosis
(5).	D. K.	47	Rectum	B III	Anterior Resection	12 Mos. P.O. (RT)	Living and well 6 Yrs. after Bilateral Oophorectomy and Cobalt Therapy
(6).	J. A.	57	Rectum	C III	Hartmann Procedure	Concomitant (RT) (Negative LT.)	Living and well 4½ yrs.
(7).	H. S.	65	Rt. Colon	C III	Rt. Colectomy	11 Mos. P.O. (RT)	*Expired 18 Mos. P.O. Carcinomatosis
(8).	F. O.	49	Rectum	B III	Abd. Perineal Resection	Concomitant (RT)	*Expired 9 Mos. P.O. Carcinomatosis

nodes. Dukes' C, Broder's III. Right colectomy, 4-17-52, St. Barnabas Hospital. Palpable nodes adjacent to the lesion, liver negative No other organic evidence of metastasis.

Laparotomy, 9-23-53 (17 months after colon resection), revealed a large adenocarcinoma, watermelon-size, in the right ovary, microscopically comparable to the original bowel lesion with pelvic carcinomatosis. The patient expired 10 days postoperatively of pulmonary embolism.

Case No. 2

D. J., female, age 34. Adenocarcinoma, rectosigmoid, 15 cm. Anterior resection, Swedish Hospital, 9-18-53. Dukes' B, Broder's III. Grapefruit-sized left ovarian lesion also present. Bilateral oophorectomy. Histologic report: Metastatic adenocarcinoma, right ovary, bowel primary; chocolate cyst, left ovary. Expired nine months p.o. of abdominal carcinomatosis.

Case No. 3

A. M. B., female, age 51. Adenocarcinoma, rectum, at 11 cm., annular. Abdominoperineal resection, 11-12-52, Fairview Hospital. Dukes' B, Broder's Grade III. Liver negative, no gross evidence of extension.

Laparotomy 7-3-53 (seven months p.o.) revealed a large metastatic adenocarcinoma of the left ovary with pelvic implantation and liver metastasis. Expired 10-7-53 of carcinomatosis.

Case No. 4

L. M., female, age 60. Adenocarcinoma, rectum, 11 cm. Anterior resection 4-18-56, St Barnabas Hospital, Dukes' C, Broder's III. Liver negative, no gross intra-abdominal metastasis. Metastatic nodule left lower lung lobe, resected by lobectomy 5-1-56. Expired of carcinomatosis from metastatic adenocarcinoma, right ovary, ten months p.o., confirmed by autopsy.

Case No. 5

D. K., female, age 47. Adenocarcinoma, rectum, 12 cm, annular. Anterior resection 3-13-56, St. Andrews Hospital. Dukes' B. Broder's III. Liver and abdomen negative grossly. (Previous total hysterectomy 1948). Laparotomy 3-11-57 (twelve months p.o.) revealed a large metastatic adenocarcinoma of the right ovary with metastasis to omentum. Bilateral oophorectomy, plus resection of greater omentum, p.o. cobalt therapy. The patient living and well at this time (six years p.o.).

Case No. 6

J. A., female, age 57. Adenocarcinoma, rectum, 12 cm. Hartmann procedure, Fairview Hospital, 10-3-57. Peritoneal extension adjacent to rectal lesion, Dukes' C, Broder's Grade III. Liver and abdomen otherwise grossly negative except for orange-sized lesion, left ovary, and right ovary grossly normal. Pathological report: Adenocarcinoma, left ovary; right negative; bowel primary. The patient living and well at this writing, four-and-a-half years p.o.

Case No. 7

H. S., female, age 65. Adenocarcinoma, ascending colon. Right colectomy, St. Barnabas Hospital, 1-23-59. Dukes' C, Broder's III. Liver and abdomen grossly negative. Laparotomy with panhysterectomy 2-24-60, adenocarcinoma of right ovary (bowel primary) with pelvic implantation. Expired 9-21-61 of abdominal carcinomatosis.

Case No. 8

F. O., female, age 49. Adenocarcinoma, rectum, annular, 9 cm. Abdomino-perineal resection 6-7-61, St. Barnabas Hospital. Dukes' B, Broder's III. Liver metastasis, left lobe. Prophylactic bilateral oophorectomy of grossly normal-appearing ovaries revealed metastatic adenocarcinoma, (bowel primary), right ovary. Expired February, 1962 of abdominal carcinomatosis.

Mode of Spread

In examining the ovarian specimen none of the resected ovaries had significant, if any, involvement of the serosal surfaces. Since we have been performing prophylactic oophorectomies concomitant with bowel resection for carcinoma, we have coincidentally found two patients with grossly normal-appearing ovaries; but on serial sections, evidence of metastatic involvement of the body of the ovary appeared.

Deddish[6] believes that secondary ovarian metastasis occurs by the lymphatic route, while Bacon[1] and his associates have suggested that it occurs by implantation. Pack and Ariel[8] cite John L. Madden's injection studies that demonstrate occasional natural portocaval shunts to explain the venous implantation of circulating neoplastic cells via the ovarian veins to the body of the ovary.

Summary

To re-emphasize our point, this paper is concerned with the metastatic spread of cancer to the ovary from primary carcinoma of the bowel. While the original and still confusing concept of the Kruckenberg tumor is that of an implantation type of lesion, usually from primary carcinoma of the stomach, and less frequently of the colon, we feel that the evidence cited in this paper conclusively establishes secondary ovarian involvement with carcinoma of the rectum and colon to be a hematogenous spread by virtue of malignant cells in the general circulation, establishing themselves in the highly susceptible host, the ovary.

Therefore we feel that concomitant bilateral oophorectomy with resection of primary carcinoma of the rectum and colon should be a routine procedure regardless of age.

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How foolish it is to exchange an old way of life for a new one in later years. — Goethe, The Attorney

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There are men who would even be afraid to commit themselves on the doctrine that castor oil is a laxative. — Camille Flammarion

Transfusion Reactions

This paper describes recent steps taken in a general hospital to protect patients against all avoidable hazards of blood-transfusion reactions. These steps include a critical analysis of a one-year experience with transfusion reactions. Also presented is a newly-constructed, abbreviated listing of etiologic agents, signs, symptoms, and therapy of blood transfusion reactions to form a basis for an approach to the recognition and correction of reactions. There is also a new Transfusion Reaction Analysis report form which was adopted and a description of several other changes in routine technique designed to protect out patients.

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OUR TRANSFUSION-REACTION experience in a general hospital of 570 beds during a recent 12-month period (1961) is illustrated in Table one. It will be noted that we had reactions in 1.58 per cent of our blood transfusions. This is to be compared to the best experience of Don Mathieson[1] during 1960, which was 1.4 per cent. His and our fever-and-chills-reaction frequencies were the same. The greatest difference in our experience occurred in the allergic reactions: his was 0.4 per cent and ours 0.91 per cent. Mathieson attributed this all-time record for his group of Rochester hospitals in part to a "more common use of diphenhydramine (benadryl) as a premedication for patients that have had previous urticarial or nonhemolytic febrile reaction." We have now adopted this policy.

Recognition of Reactions

In spite of the fact that our blood-banking and transfusion-service methods were recently approved by examiners for both the Federal Public Health Service and the American Association of Blood Banks, our review of the charts of patients and the laboratory records of 2,403 blood transfusions revealed several defects in our organization for the diagnosis and control of blood-transfusion reactions. To eliminate these defects we must insist upon: (1) recognition of all reactions, (2) notification of the laboratory on all occasions of reactions, (3) performance of complete laboratory studies in

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[*] Presented to the Sixth Annual Meeting of the Minnesota Association of Blood Banks, Minneapolis, Minnesota, May 9, 1962.
[†] St. Luke's Hospital.

TYPES OF TRANSFUSION REACTIONS

INFECTIONS AGENTS + CONTAMINATIONS

DISEASES PRODUCED

1. Serum Hepatitis.
2. Syphilis.
3. Malaria.
4. Brucellosis.
5. Streptococcemia.
6. Rubella.

VIRAL HEPATITIS—(most important of all)

Frequency—approx. 1 in 1000 trans. (?)
Modern Protection—not adequate.
Threat—With every transfusion.
Incubation—2 weeks to 6 months.
Therapy—Gamma globulin—early.
Future—Immunization of population (?).
Plasma—Protected after 6 mo. at room temperature.

ENDOTOXIN PRODUCED	MECHANISM
1. Excherichia. 2. Pseudomonas. 3. Paracolon. 4. Others.	Endotoxins formed by these saprophites growing in blood at 4°C - Causes Shock.

Signs and Symptoms:
Profound shock (hypotension). Collapse.
Chills and fever. Bloody diarrhea.
Abdominal pains. Anuria.
Vomiting.
Death expected in a few hours or days.

Therapy:
1. Antibiotics broad-spectrum in large dosage.
2. Continuous I. V. pressor drugs.
3. Avoid corticosteroid.

Prevention—a laboratory responsibility

PYROGENIC REACTION-UNKNOWN AGENT

Frequency—our most common fever reaction (0.58%)
Symptoms—chills, rapid rise of temp, headaches, and apprehension.
Recovery within 24 hours.
Prognosis:
Rule out known causes of reactions.

Therapy:
1. Symptomatic.
2. Codeine—i. v.
3. Antihistamines (?)
4. Salicylates (?)

LEUKOCYTIC SENSITIVITY

Etiology—Recipient is sensitized to WBC's thru pregnancy or previous transfus.
Frequency: After 2nd pregnancy—25-50%
After transfusions—0-50%
Both proportional to number.
Symptoms: Fever and chills may be fatal in weak patient.

Diagnosis:
1. Lab. test—for WBC agglutinins.
2. Clinical trial—RBC's without WBC's later plasma with WBC's.

Control—Remove WBC's by refrigerated centrifugation of fresh blood.

ALLERGIC REACTIONS

Frequency—our most common reaction (0.9%)
Signs and Symptoms:
Urticaria.
Itching.
Rashes.
Asthmatic.
Polyarthritis.
Fever, chills.
Angioneurotic edema.
Anaphylactic shock.

Types:
1. Passive transfer antibodies.
2. Transfer of antigen.

Therapy:
Antihistamine & or epinephrine. Codeine i. v. and steroids for severe cases.

Control:
1. Generally the transfusion can be continued with prophylacsis.
2. Elimination of certain donors is inadequate.

COAGULATION DEFECTS

Cause—Thrombocytopenia, deficiency of clotting plasma factors and possibly fibrinolysin. (stored blood).

Occurrence—after massive transfusion 10-15 in 24 hours.

Signs: "The Oozing Disease."
Oozing from all cut surfaces, needle punctures, mucous membranes, sites of injury and petechiae.

Therapy:
1. Stop breeding.
2. Fresh blood.
3. Specific blood fractions.

CIRCULATORY OVER-LOAD

Cause:
1. Over rapid or large quantity transfusion.
2. Undue burden on heart.
3. Circulatory failure—pulmonary congestion and edema.

Especially susceptible patients - are:
Chronic cachexia—most causes.
Chronic anemia—most causes.
Cardiac patients.
Malignancy.
Liver and kidney diseases.
Erythroblastosis fetalis.

Signs and Symptoms:
Pulmonary edema, dyspnea, orthopnea, cyanosis, rapid feeble pulse, shock like state, frothy fluid coughed up, rales, dysrhythmia, engorged veins.

Consider:
1. Estimated a third of blood needed on medical service should be "packed" RBC's Sans 200 ml. plasma.
2. Oxygen carrying capacity (for anemia vs. need for increased blood volume (as in shock and hemorrhage).

Therapy:
Tourniquets on extremities, phlebotomy, oxygen.

CITRATE TOXICITY

Physiology:
Citrate combines with calcium.
Hypocalcemia. Cardiac dysrhythmia.
Normal serum citrate=3 mg. %.
Excess serum citrate=50 mg. %-dangerous 500 ml. blood given in 5 minutes-dangerous
Citrate is metabolized by liver (80%) and excreted by kidneys (20%).

Types of Patients:
1. Erythroblastosis fetalis.
2. Liver diseases.
3. Kidney diseases.
4. Hypothemic patients.
5. Large volumes used rapidly.

Signs and Symptoms:
1. Cardiac dysrythmia, convulsions, hypotension, collapse, muscle twitching.

Therapy:
Calcium chloride 10% i. v., at rate of 0.5 to 1.0 ml. per minute until hypotension and E. C. G. are reversed or until 10 ml. is given.

HEMOLYTIC TRANSFUSION REACTION

Physiology:

1. Antigen + antibody reaction.
2. Hemoglobin release.
3. Shock phenomena.
4. "Lower nephron nephrosis,"
5. Diuresis phase

IMMEDIATE ACTION

1. Stop transfusion.
2. Notify laboratory.
3. Send "used" blood container to laboratory.

SYMPTOMS AND SIGNS (generally dramatic, occasionally occult)	THERAPY
FIRST PHASE SHOCK 1. Severe back pain. 2. Constriction in chest. 3. Breathlessness. 4. Fever and chills. 5. Hypotension. 6. Shock 7. Bilirubinemia. 8. Hemoglobulinemia and—uria. 9. Death.	1. Shock—plasma. 2. Blood transfusion if anemic patient. 3. Pressor agents—important. 4. Possible antihistamines. 5. Do not alkalinize the urine. 6. Record intake—output. 7. Serum electrolytes, catabolites.
PHASE ANURIA 1. Jaundice. 2. Thrombocytopenia, hypothrombinemia, fibrinogenolysis and bleeding phenomena. 3. Anuria or oligivia. 4. RBC casts and proteinuria. 5. Azotemia. 6. Hyperkalemia. 7. Acidosis. 8. Uremia. 9. Death.	1. Recognize "closed system" and eminent pulmonary oedema and death. 2. Carefully calculated fluid intake (recommended: Bull's continuous gastric drip of glucose, peanut oil, acacia, and water). 3. Peritoneal or gastric lavage finally extracorporeal dialysis. 4. A. C. T. H. and cortisone? replacement transfusion?
3rd DIURESIS 1. Copious diuresis. 2. Possible excess loss of water. 3. Possible excess loss of sodium. 4. Possible excess loss of chloride. 5. Death from electrolyte imbalance and hypovolemia.	1. Controlled water, sodium, potassium, and other electrolytes after diuresis starts and for several weeks.
Laboratory Diagnosis: 1. Hemoglobulinemia (immediate) Nor. 1 to 15 mg. %. 2. Hemoglobulinuria. 3. Bilirubinemia after 6 hours. 4. Pts. RBC's—Coombs positive. 5. Recheck blood types and crossmatch.	Prognosis: Although much smaller amounts of blood have caused death, 200 ml. generally needed for fatal dose. Once oliguria and anuria develop the mortality rate is between 25 and 50%.

MISCELLANEOUC HAZARDS

AIR EMBOLISM—

1. Should not occur with new plastic equipment.
2. Special care required when large veins are used. Less than 200 ml. of air has been fatal. For therapy patient should lie on left side. Consider aspirating the air from the right ventricle.

THROMBOPHLEBITIS—

Generally related to rubber tubing and irritating solutions. Use plastic catheter for injecting 50% dextrose.

HEMOSIDEROSIS—

500 ml. blood has 250 mg. iron, body loss of iron is approximately 1 mg. q. da. Excessive stored iron injures liver and pancreas.

PHARMACEUTICAL INCOMPATIBILITY—

Simultaneous flow of glucose & blood may result in numerous thrombae and severe reactions. Ca Cl clots blood in container or tube. Some vitamin preparations have high Ph and alter blood.

OVER HEATING BLOOD—

Will cause pyrogenic and hemolytic reactions.

POTASSIUM POISONING—

Blood over 5 days old (ACD) should not be used for exchange transfusions of newborns. The K + + from RBC's may result in hyperpotassemia and cardiac "standstill." Use of large quantities of 21 day old (ACD) blood in adults should be controlled by serum potassium analyses.

POST TRANSFUSION JAUNDICE—

Sufficient hemoglobulinemia may have accumulated in large amounts of "old" blood to produce a bilirubinemia of over 20 mg. %. A hemolytic reaction is a much more likely explanation in a given case.

HEMATOMA—

Consider complications of secondary infections and gangrene of extremity.

REACTIONS OF UNDETERMINED ETIOLOGY—

Bizarre or "hodgepodge" ill defined manifestations.

all cases of reactions, and (4) a written diagnosis signed by the pathologist on a new laboratory report form used for all reactions. There must be no failures or omissions in our program.

Responsibility For Transfusions

Four recent changes in our approach to blood-transfusion reactions are improving our service. A team of three registered nurses now specializes in bleeding donors, starting transfusions, and observing the recipients for reactions during the daytime. The night supervisor of nurses is considered responsible during her period of duty. Physicians are urged to use the 'first team" by giving blood during the daytime whenever possible. Each patient admitted to this hospital now has his name, hospital number, room number, and physician's name on a plastic wrist band. The many Olsons, Johnsons, and Makis of our community may continue to give us some trouble.

Failing to find a complete and satisfactorily-abbreviated listing of signs and symptoms of transfusion reactions in medical literature, we constructed our own (Figure one). This was used as the basis for an alert of our medical staff to their responsibilities and as instruction and reference for our technologists and nurses.

Sources of Danger

You will find here a listing of the two principal modes by which organismal contaminants of the donor's blood may injure the patient. The first is by a transfer of an infectious-disease process, the second by an overwhelming shock reaction, in large part due to endotoxins. The other varied and well-established and relatively frequent etiologic mechanisms of reactions are briefly defined. They include: leukocyte and platelet sensitivity, allergic reactions, coagulation defects, circulatory overload, citrate toxicity, and hemolytic reactions. The pyrogenic reactions due to unknown agents, our most common cause of fever, have fallen in the last 25 years from 7.5 per cent to the present 0.58 per cent. These pyrogenic reactions still remain our greatest problem, however, and the principal cost of post-reaction studies.

Analysis of Reactions

The most important change in our post-reaction procedure from the pathology service viewpoint, was the development of a "Transfusion Reaction Analysis" report form (Figure 2). This is the only series of routine tests done in our laboratory for which the patient does not receive a direct charge. It has practically eliminated any laxity in the laboratory personnel with respect to transfusion reactions. We can pin-point laboratory-detectable causes of a reaction and make the finding a permanent part of the patient's record. A report of laboratory responsibilities is made on one of these slips for every transfusion reaction. The various tests are performed as directed by the pathologist. He is responsible for a diagnosis related to the laboratory aspects of each reaction. All fever reactions except the most minor, automatically require the entire gamut of tests. Since each laboratory procedure is initiated by the medical technologist who performed it, the person responsible for an error can easily be located.

It will be noted that the red-blood-cell and the plasma types are determined on the patient's blood taken before (from pilot test test tube) and after the transfusion (fresh from the patient), and on the donor's blood in the sample tube, and from the blood remaining in the plastic bottle of the donor's blood. Rare antibodies are tested for in the patient's and donor's sera, using one of the commercially available panels of cells provided for the purpose. The rare antigens tested for in the patient's and donor's red blood cells include Kell and Duffy. For further testing we consult Israel Davidsohn. If the reaction follows the use of a "Universal Donor" group O blood, the tests for both isoantibodies and immune antibodies are repeated, this time on the blood remaining in the plastic container and not in the pilot tubes. The serum and urine hemoglobin tests on blood and urine, taken immediately after the reaction, are performed by a relatively simple and accurate procedure developed by Evelyn and Malloy,[2] using cyanmethemoglobin by Hycel as a standard. Six hours after a fever reaction the serum bilirubin is determined. Coomb's antibody tests are repeated. A white blood cell agglutin test is run when indicated in patients with multiple transfusions and repeated febrile reactions. The postreaction tests

Table one — BLOOD TRANSFUSION REACTIONS*

TYPE OF REACTION	NUMBER	PER CENT OF 2,403
Hyperthermic	14	0.58
Allergic	22	0.91
Circulatory	0	0
Hemolytic	0	0
Undetermined	2	0.07
TOTAL	38	1.58

*Reactions in 2,403 Transfusions in 12 months.

including smears and cultures are made of the donor's bottle which is routinely sent to the laboratory after every blood transfusion. The re-cross match tests are routinely checked by the pathologist who, after seeing all reports, makes a diagnosis and signs the report.

Summary

An analysis of 2,403 blood transfusions given during 1961 revealed a total of 1.58 per cent reactions. Five changes of procedure should improve our blood transfusion service.

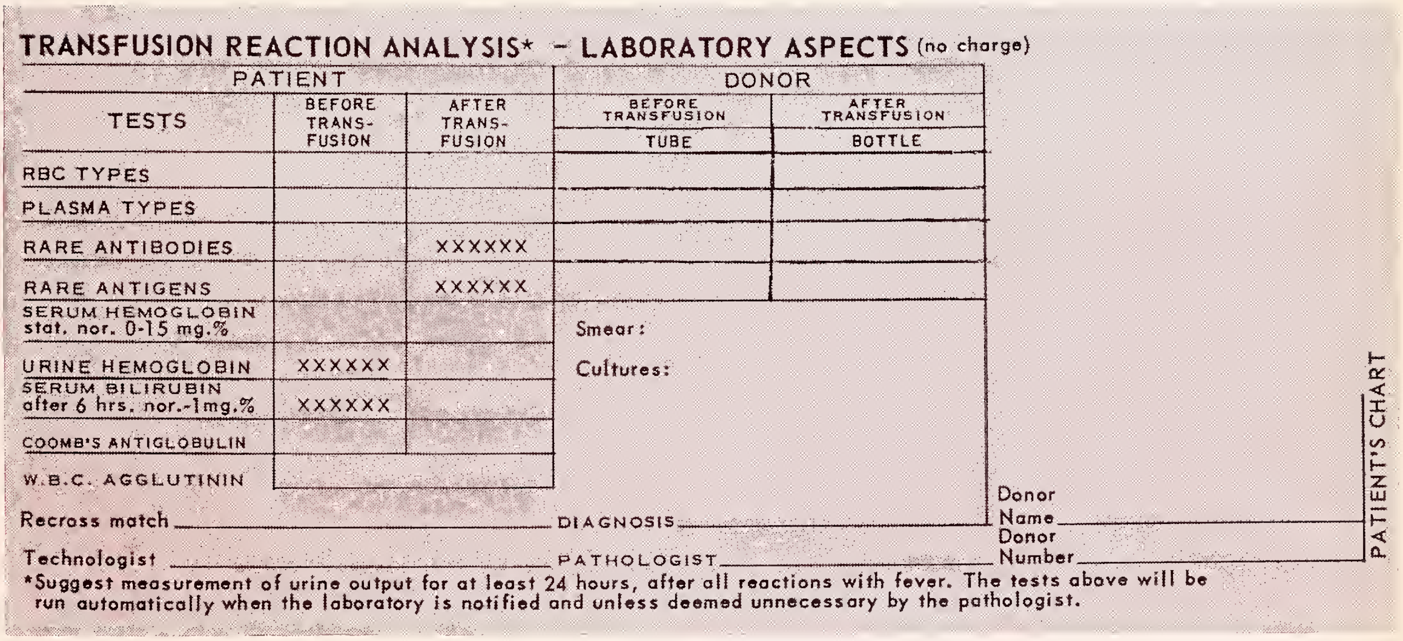
(1) Our 0.9 per cent allergic reactions should be reduced by the routine use of diphenhydramine given before transfusions to patients who have experienced allergic or unexplained febrile reactions with previous transfusions.

(2) The use of a "Transfusion Team" of registered nurses should provide expert recognition of all reactions at the earliest possible time.

(3) The routine use of plastic wrist bands with the patient's name, hospital number, room number, and physician's name along with vocal confirmation of names should eliminate any possible failure of proper identification of recipients of blood.

(4) Abbreviated listings of etiologic agents, signs, symptoms and therapy of the generally accepted causes of transfusion reactions have been compiled (Figure 1) for educational and quick reference purposes.

(5) A "Transfusion Reaction Analysis" report form (Figure 2) provides a handy means of routinely studying patient's and donor's bloods for any cause of a reaction related to the laboratory service.



TRANSFUSION REACTION ANALYSIS* – LABORATORY ASPECTS (no charge)

TESTS	PATIENT BEFORE TRANS-FUSION	 AFTER TRANS-FUSION	DONOR BEFORE TRANSFUSION TUBE	 AFTER TRANSFUSION BOTTLE
RBC TYPES				
PLASMA TYPES				
RARE ANTIBODIES		XXXXXX		
RARE ANTIGENS		XXXXXX		
SERUM HEMOGLOBIN stat. nor. 0-15 mg.%			Smear:	
URINE HEMOGLOBIN	XXXXXX		Cultures:	
SERUM BILIRUBIN after 6 hrs. nor.-1mg.%	XXXXXX			
COOMB'S ANTIGLOBULIN				
W.B.C. AGGLUTININ				

Recross match ________ DIAGNOSIS ________ Donor Name ________

Technologist ________ PATHOLOGIST ________ Donor Number ________

PATIENT'S CHART

*Suggest measurement of urine output for at least 24 hours, after all reactions with fever. The tests above will be run automatically when the laboratory is notified and unless deemed unnecessary by the pathologist.

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2. Evelyn and Malloy: Photometic Determination of Methemoglobin and Total Hemoglobin J Biol Chem 126:655, 1938.

Speak well of everyone if you speak of them at all—None of us is so very good. — Elbert Hubbard

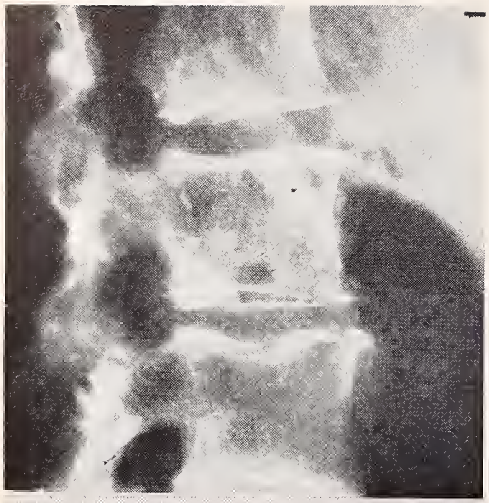

Figure I:
X ray of lumbar spine, June 30, 1961: Normal configuration of vertebrae.

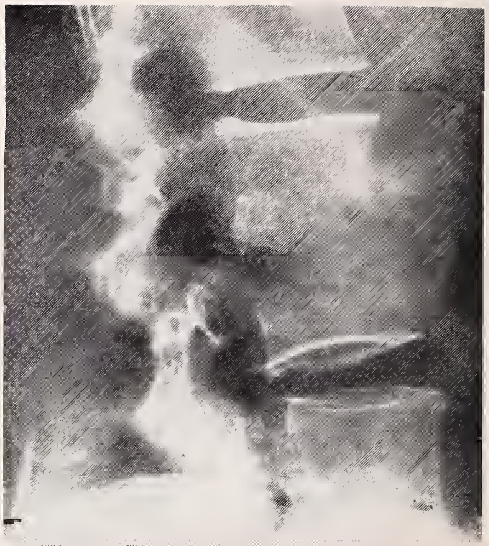

Figure II:
X ray of lumbar spine, July 28, 1961: Gross destruction of two adjacent vertebrae now evident.

Osteomyelitis of

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Although rare, osteomyelitis of the spine must be suspected in every case of fever of obscure origin. Infection of the vertebrae must be considered and appropriate X rays of the spine including laminograms should be obtained.

FEVER OF UNKNOWN or obscure origin presents a perplexing diagnostic problem to the clinician. Often, after a host of unrevealing tests, an exploratory operation is resorted to in an effort to arrive at a correct diagnosis. Geraci and Nichols[1] have reported on the value of elective abdominal exploration in the diagnosis of unexplained fevers. Not infrequently, however, the underlying condition simulates an acute abdominal catastrophe, and the unwary surgeon is chagrined to find, upon emergency exploration of the abdomen, a healthy peritoneal cavity.

The purpose of this paper is to draw attention to a well-documented condition, which is

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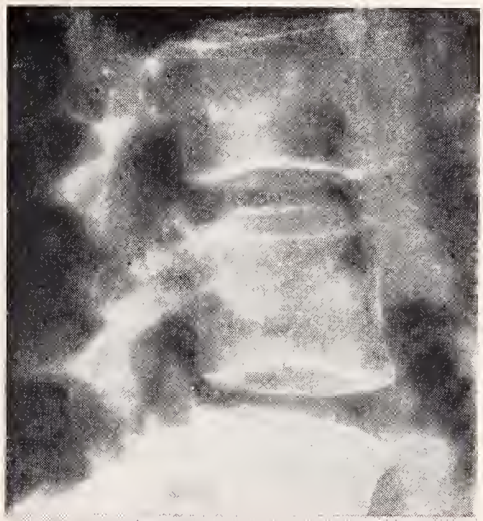

Figure III:
X ray of lumbar spine, November 6, 1961: Normal appearance.

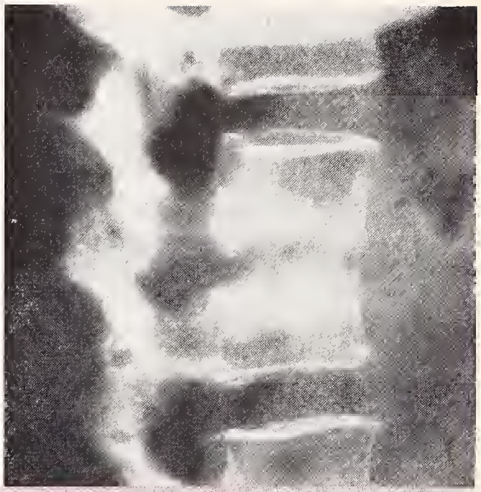

Figure IV:
Appearance of lumbar spine on February 5, 1962: Showing destruction of two adjacent lumbar vertebrae.

the Spine

A Cause of Fever of Obscure Origin

frequently overlooked as a cause of fever and may present with abdominal or chest pain: i.e., acute pyogenic osteomyelitis of the vertebrae or intravertebral discs. Guri[2] has described several clinical presentations depending upon the segmental involvement of the vertebrae. If fever is the presenting symptom, the diagnosis may be extremely difficult to reach, because radiological evidence of the lesion may take many weeks to develop. Thus the fever is labeled of unknown or obscure origin.

The following two cases seen recently at the University of Minnesota Hospitals are illustrative of the difficulties encountered in establishing the diagnosis.

Case Report

Case One:

This fifty-year-old white female was first admitted to the University Hospital in February, 1960, following the onset of sudden paraplegia associated with fever and believed to be due to occlusion of an anterior spinal artery. She complained of pain across the upper abdomen, but though seen by a number of consultants, a clear-cut diagnosis was not made. The second admission on June 26, 1961, was precipitated by an episode of severe discomfort in the right upper quadrant; an exploratory operation was advised. There was no sign of infection within the peritoneal cavity. Cholecystectomy was performed.

Staphillin therapy was commenced, following surgery, but fever persisted, and on the 14th of July films of the lumbar spine revealed definite evidence of vertebral destruction, figure 2. Aspiration delivered necrotic material, which proved sterile on culture. Subsequent curettings revealed a fairly large cystic cavity. On continued antibiotic therapy, the fever subsided and the patient was discharged in early September.

It is highly probable that the paraplegia was the result of hematogenous spread of infection to a spinal artery. Wilensky[3] has reported on several cases of paraplegia occurring as a complication of acute spinal osteomyelitis. The fact that osteomyelitis of the spine was not considered in the differential diagnosis emphasizes the ease with which this condition may be overlooked, particularly when X rays of the spine are reported as normal.

Case Two:

This fifty-five-year-old diabetic obese white female, was admitted to the orthopedic service on October 9, 1961, complaining of severe pain in the right flank and lower abdomen. She had had an osteoplasty performed in December, 1960, for arthritis of the right hip. Since one month prior to the present admission, she had experienced pain radiating down the right leg, which was thought to represent neuromuscular dystrophy. She received a series of lumbar parasympathetic blocks in October, and two days after the last injection, she developed the severe pain described above.

On examination marked tenderness was elicited, particularly in the right flank and right lower quadrant. Bowel sounds were, however, active, and there was no rebound. Because of her obesity and inability to move her hip, it was not possible to examine her adequately for spinal movements. Her temperature reached 104° on the third day following her admission, and because of continued abdominal pain the surgical service was consulted.

The laboratory studies revealed a high sedimentation rate of 110 millimeters per hour and a leukocyte count within normal limits. Urinalysis was normal and blood cultures were negative. Roentgenograms of the abdomen revealed free air along the psoas muscle on the right. The possibility was considered that this represented inadvertent duodenal perforation as a consequence of the paravertebral blocks, but it was later discovered that this was actually injected air. Conservative therapy consisting of antibiotics and nasogastric suction was instituted, followed by subsidence of symptoms and the fever. Roentgenograms of the lumbar spine were read as normal, figure 3. A lumbar myelogram revealed no pathology. Fever soon recurred however, and because of the continued flank pain and evidence of deviated right ureter on intravenous pyelogram, a retroperitoneal exploration of the right perinephric region was performed on the 22nd of November. No pathology was noted. The patient continued to be treated on antibiotics, and despite gradual subsidence of the fever, the erythrocyte sedimentation rate remained high. She was discharged only to be readmitted in January, 1962, complaining of severe back pain. Films of lumbar spine now revealed an osteolytic process involving the bodies of the third and fourth lumbar vertebrae, figure 4.

Infection of the vertebrae could have been introduced by a contaminated needle used in the lumbar block. The diagnosis of osteomyelitis was considered earlier, but because of the lack of radiologic evidence, no definite diagnosis could be made. Wear[4] had a similar experience with a patient who complained of back pain following sympathetic nerve for a vascular disturbance. A diagnosis of hypertrophic arthritis was made, but eventually roentgenograms revealed destruction of a transverse process and staphylococcus aureus was cultured from aspirated material.

Summary

Upon reviewing the literature, it is evident that both these patients presented fairly typical symptoms, and yet because of the abdominal pain and lack of definitive radiological findings both underwent a semi-emergency operation with negative findings. Other authors have described similar experiences.[5, 6]

Carnett[7] has suggested a simple clinical test that may be helpful in differentiating pain due to abdominal disease from that due to an extra-abdominal lesion. If the condition is primarily within the abdomen, pain presenting during palpatation should diminish when the abdominal muscles are contracted, whereas if the pain is due to a vertebral lesion, no change occurs. Further, if pain is due to a vertebral lesion, there is generally no rebound and the patient is fairly tolerant of deep palpatation. Nausea and vomiting are not conspicuous and bowel sounds are active. Physical examination of the spine is very helpful; localized tenderness, limitation of movement, and spasm of the back muscles are all diagnostic pointers.

Laboratory studies are not very helpful. Sullivan[8] had drawn attention to the high erythrocyte sedimentation rate that occurs despite the relatively normal leukocyte count. This was a feature in both the above cases. In Guri's[2] series 25% of the patients were diabetics. This, however, is not surprising in view of the susceptibility of diabetics to infection.

Roentgenograms will provide the final definitive proof, but weeks or months may have passed before the lesion becomes evident on X ray. Once suspected, repeated films or even laminograms should be performed. Even in the absence of X ray evidence, osteomyelitis of the vertebrae should always assume a prominent consideration in the differential diagnosis of fever of obscure origin.

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WHAT'S YOUR DIAGNOSIS?

A 72-year old business man had one episode of syncope in which he fell to the floor remaining unconscious for a few minutes. An out-patient examination done two hours later revealed no significant physical findings, normal electrocardiogram, electroencephalogram and chest x-ray. He returned to his work the next day feeling well. One month later he experienced severe constant bilateral frontal headache and dragging of the right foot. He was then admitted to the hospital.

His past medical history included an operation for carcinoma of the sigmoid colon 8 years earlier and a mild degree of hypertension which had been controlled by chlorothiazide. Semi-annual proctoscopic examinations and annual physical examinations and chest x-rays showed no evidence of metastasis or recurrence.

Admission examination showed a moderately obese man with mild disturbance of mentation, with difficulty in responding to serial sevens and dysarthria to test phrases. There was slight ptosis of the left eye lid; pupils were equal and reacted to light. The fundi were negative. Examination of the lungs, heart, abdomen and rectum was negative. The right biceps and triceps reflexes were hypoactive and right patellar and Achilles reflexes hyperactive. Babinski and Oppenheim signs were positive on the right. His gait was abnormal with dragging of the right leg. The right arm was held in the flexed position with the hand clenched.

Routine blood counts, alkaline phosphatase, acid phosphatase, VDRL, prothrombin time, chest and skull x-rays were normal. Spinal fluid pressure was 250 mm., H_2O, with no cells and protein of 31 mg.%. Electroencephalogram now showed slow activity in the left hemisphere.

His condition of right hemiparesis remained unchanged and on the 12th hospital day anticoagulant therapy was begun. Dicumarol was given over a three day period. The prothrombin time reached a maximum on the fourth day of 27.2 seconds versus a control of 13.1 seconds. Anticoagulant therapy was discontinued because of coincident spectacular deterioration in his condition. The hemiparesis increased to hemiplegia. He became incontinent and lapsed into unconsciousness. On the 17th hospital day an operation was done.

What is your diagnosis? See page 1251.

The one thing that hurts more than paying an income tax is not having to pay an income tax. — Thomas Dewar

Shelters—Mass and Private

The possibility of nuclear disaster is now generally accepted. Not so generally granted, however, is the paramount of importance of survival for millions of Americans in the event of nuclear war. The author presents sound reasoning for vigorous action on the part of every citizen as we look to the future.

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FALLOUT SHELTER space, if available, can save millions of lives in the event of a nuclear attack. If such a gross disaster occurs, our singular objective as citizens is to *survive*. Secondly, and only then, can we execute plans for recovery, including *medical care of casualties*.

On July 25, 1961, President Kennedy said, "In the event of attack, the lives of those families which are not hit in the nuclear blast and fire can still be saved if they can be warned to take shelter and if that shelter is available. We owe that kind of insurance to our families and to our country."

On March 8, 1962, Mr. Gilpatrick, Deputy Secretary of Defense, said, "Differing conditions of attack and increasing enemy capability over the years ahead may sharply increase the fatalities which could not be avoided by fallout shelters . . . Nevertheless, the number of lives saved by fallout shelters would not be reduced below the 40-55 million range. That number remains the most stable element in our projections . . . This administration . . . is determined that all Americans should have access to the degree of protection which is provided by fallout shelter space. The President's civil defense program looks ahead to an estimated four to six years to accomplish this undertaking, but it must depend on a full response from an informed America." I have attempted to show, in this quotation, the posture of our government on the need of fallout shelter space, and in that context address the two most critical questions: Will we, as a free people, give a full response to this undertaking? What have we done, and what can we do in providing shelter space? Time only will answer the first question; let's now explore the second.

Underground Shelters in Sweden

Before going into some of the aspects of shelter space in which our government is presently engaged, I would like to acquaint you with a startling example of what a neutral, peace-loving country is doing. Over 20 years ago, Sweden decided to go underground, and today the headquarters and hangars of her air force (fourth largest in the world), with an estimated 1,500 planes, her navy with its docks and repair shops, munition and fuel dumps, power plants, sewage-disposal systems, civil defense, with its network of control centers and public shelters, hospitals with stores of medical equipment, fire stations, laboratories—*all are underground.* One example is the two-story Saab aircraft factory. Five million cubic feet of solid rock were removed for the 20 air-conditioned compartments that form this complex. Nearly 6,000 people are employed here, with a lower turnover than comparable plants above ground. As I have stated, this is the theme of civil defense in Sweden; it is a continuing effort and causes us to reflect on our own planning —or lack thereof—in civil defense.

The Need for Shelters

Fallout shelters are designed not as blast shelters, but for protection from radiation. In addition, they can, if properly constructed, afford refuge from natural disasters, such as wind and tornado; and if properly planned, they can be utilized as stockrooms, workshops, or for other purposes. Shelter space is a combined federal, state, community, and individual problem. If an attack should come, the estimated numbers of casualties and the possible emotional climate of a society whose structure is badly fractured, portray a grim picture at best. Unpreparedness is inexcusable negligence in view of our nation's will to survive.

The morality of shelter preparedness cannot be questioned. Your decision on defense is your personal responsibility; most important is the absolute necessity that everyone in your family know where to go and what to do in the event of attack. A family plan of action, whether, to a mass shelter or home shelter, is first and foremost in survival effort.

The Responsibility of the Government

While it is the opinion of civil defense that for the long run mass shelters are probably the better answer, for the present both home and mass shelters are the answer.

The last Congress appropriated 93 million dollars to survey the availability of shelters in existing public and private buildings. The Army Corps of Engineers has the responsibility for this survey, which is now for the most part complete. Phase II involves actual recommendations from the survey team to the property owners as to the alterations necessary to make an area suitable as a shelter. The federal government will not participate financially in these changes; the property owner himself will have to be responsible. However, certain non-profit institutions such as hospitals may receive some aid; also, some federal funds are earmarked for essential supplies and equipment for these public shelters. It is expected that this plan, when complete, will provide shelter space for approximately 50 million people—one fourth of our population.

Management

To attain minimum protection and stock the necessary supplies and equipment, and to set up an effective management system to provide for the survival of the greatest number, are the two most important factors. The ordinary functions of everyday life become critical for survival within a shelter. Law and order must prevail; eating, sanitation, sleeping, and constructive activity must be provided for. The ability of the manager to fuse the individuals into a unified group and to deal with these and other factors, is critical to success. The management problem is best solved if an existing management structure, such as a business organization within its own shelter, or a family within its home shelter, can be utilized. It is obvious, therefore, that I arrive at the family shelter in the home as the best immediate answer for the homeowner. It is estimated that 1,000 of the approximately 14,000 homes in Rochester have shelters. As a result of the survey it is known that we have a capability of 300 mass shelters for a total capacity of 60,000 people.

The Basic Requirements of Shelter

In order to provide for a protection factor of at least 100, a corner of the basement, with additional shielding of eight inches of solid concrete block on all sides and roof, will be adequate. Bed occupancy should be rotated in order to avoid exposure of one individual to a possible hot spot. In most basement shelters, vents near the floor and an open baffled doorway will give adequate ventilation. In the event of broken windows from blast, blankets or drapes should be used to seal the openings to prevent radioactive dust from entering the house.

Supplies and Equipment

A two-week supply of food and water, extra clothing and bedding, a good battery-operated transistor radio, and a radiation monitoring device should be at hand. Auxiliary flashlights and lanterns should be available in the event electricity is not being furnished from the regular source. A sanitary toilet with a large airtight waste can, a first-aid kit, and personal medicines should be set aside. Many other supplies may be stored in or close to the shelter to provide the comfort that may very well be the key to the family's survival.

While no one can predict the exact decay process of the fallout, it is possible and very probable that after a comparatively short time, i. e., two days, the radiation level outside may be low enough to enable you to leave the shelter briefly to replenish supplies from the basement, without appreciably increasing your accumulated dose.

Summary

Several words of caution about your shelter planning are indicated from my personal experience and that of several friends of mine. It takes time to develop your plans, and to stock the necessary supplies and equipment. This is not a weekend project—more like a six-month one. Know the fundamentals on adequate shielding to be sure you and your contractor come up with an end product that is satisfactory. This does not have to be expensive. On the other hand, even though you are not planning it for vacation living, be sure that it is adequate for the survival of your family. To completely ignore the problem of protection from blast and heat is a mistake for those families who live in what is considered a strategic target area. Our knowledge of blast and of its effects on humans and structural design is greatly expanding with intensive studies of Hiroshima and our own research. From these we may learn that for the strategic areas, mass shelters may be the only economical and practical answer to protection.

This nuclear age in which we live will eventually see every nation able to launch a nuclear attack. Because of this potentiality, a nuclear war could be precipitated by a tragic error or by a deliberate attack, based on a calculated risk that we could not survive and retaliate. To be unprepared for survival, therefore, is inconsistent with our rationality, and such unpreparedness would only encourage the possibility of gross disaster. Because unpreparedness leaves only capitulation, it would also destroy our chance of eliminating the risk of nuclear war through international cooperation.

To be seventy years young is sometimes far more cheerful than to be forty years old. — Don Herold

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It is one of the most detestable habits of a Lilliputian mind to credit other people with its own malignant pettiness. — Balzac - Pere Goriot

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Tranquility

Be not disturbed at trifles or accidents common or unavoidable.

Humility

Imitate Jesus and Socrates.

Virtue

Virtue is not secure until its practice becomes a habitude.—Benjamin Franklin

Serological Testing for Syphilis in Minnesota in 1960

A Need for a Higher Index of Suspicion

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The problem of syphilis requires constant attention. Any relaxation in our community control is immediately reflected in an increasing number of infected people. The authors have reviewed the testing program for syphilis in the State of Minnesota during recent years and make specific recommendations for the immediate future.

THE REDUCTION of reported cases of syphilis following the post-World War II peak which occurred in 1946 prompted the Minnesota Department of Health Laboratories to evaluate its serologic testing program as a case-finding tool. This study of the individuals tested in 1952, correlated with reported cases for the same year, aided in the development of recommendations for an increase in testing selected segments of the population and a more limited use of routine testing.[1] The reduction in reported cases of syphilis continued until 1958 and 1959, when less than 200 cases were reported annually (Table 1). The increase since that time, and particularly the significant increase in cases of infectious syphilis in 1960 and 1961, has prompted a study of the current serologic testing program to determine present needs.

The cautious phrase "reported cases of syphilis" is standard in public health practice. It is used to indicate the known fact that all syphilitic infections are not found, diagnosed, treated and reported to the official public health agency. The excellent cooperation in reporting syphilis cases that this department has had from practicing physicians in Minnesota has long been recognized and has recently been confirmed by a study of the case reporting in 1959 and

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*From the Minnesota Department of Health

1960,[2] which revealed that only 36 additional cases or 9.5% of the total reported cases had been diagnosed but not reported. With confidence that the reported cases represent a large proportion of the diagnosed cases, the emphasis can thus be placed on how the unknown syphilis cases can be found and treated.

The current study, using data from 1960, followed a pattern similar to that used in the 1952 study,[1] a comparison study of specimens submitted for testing and the yield of reported cases of syphilis.

Method

Source of the data

The study was based on a 1% sample of all blood specimens tested in 1960 in the health department laboratories and on 100% of reported cases in which the diagnostic serology was done in the department laboratories.

A total of 155,115 blood specimens were received in 1960 for serologic tests for syphilis. Specimens which were unsatisfactory for testing (1997) and those for which results were not reported (230) because of insufficient identification of the patient and-or physician totaled 2,127, or 1.4%. From the remaining 152,988 specimens which were tested and on which results were reported the 1% study sample (1,521) specimen data cards) was selected by an appropriate random sampling method. The sample error was within expected theoretical limits, as determined by comparing the sample characteristics with those of the total specimens. The procedures used were similar to those described for the 1952 study.[1]

The sample was analyzed to provide data on the age, sex, color, marital status and residence of persons from whom specimens were submitted, and also the reason and the source (private physicians, hospitals, institutions, etc.); these data from the sample were used to represent the entire year's testing. Using 1960 census data [3,4] the percentage of testing of various segments of the Minnesota population was also calculated.

There were 220 new cases of syphilis reported in 1960; 63 cases (28.6 per cent) were eliminated from the study because the diagnostic serology was done in laboratories other than those of the Minnesota Department of Health.* The study included the remaining 157 reported cases.

An analysis of reported cases as to age, sex, etc. was made, and the data then correlated with information on the serologic test for syphilis sample to provide the number of specimens tested per case found. The source (private physician, hospital, etc.) and the reason indicated on the data card accompanying the initial specimen which led to the diagnosis of each case were also correlated with information from the serologic test for syphilis sample to provide the number of specimens tested per case found in appropriate segments of the total serologic testing. The data from the 1960 study were compared with similar data from the previously published 1952 study.[1]

Limitation of the data

Accuracy of specific data (age, marital status, clinical diagnosis, etc.) for each individual tested and each reported case was limited by the accuracy and the completeness of the information given on cards submitted with the specimens and case report cards. Information in regard to residence, age, marital status and the reason for submitting the specimen was given more often in 1960 than in 1952 (Table II) but less often in regard to color.

Another limitation of the data is associated with repeated testing of the same individuals in the same year. The extent of this repeat testing cannot be accurately measured.

Two of these limitations (specific data such as age, etc. omitted and repeated testing of the same individual) cause inaccuracies which tend to neutralize each other. This has been used to advantage by dropping the number on which there was no information in the sample (6 to 9 per cent) to compensate for the repeat testing. It is probable that this compensation brings the

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* Cases diagnosed on the basis of screen testing done in other laboratories on which a portion of the first reactive specimen was sent to the Minnesota Department of Health Laboratories were included. For the 63 cases which were excluded, the first reactive specimens, as judged by the source of 61 of the case reports, were probably tested in the following laboratories: Minneapolis General Hospital, 24 cases; Minneapolis Health Department, 22; Mayo Clinic, 11; Veterans Administration Hospital 1; out-of-state laboratories, 2; and an unknown laboratory, 1 case. The remaining two eliminated cases were diagnosed on the basis of darkfield examinations not serologic test for syphilis. Among the 11 cases of syphilis in Minnesota residents, reported by the Mayo Clinic, three were residents of the Twin Cities and eight were residents of three counties in southern Minnesota.

Table I
TOTAL BLOOD SPECIMENS TESTED AND
REPORTED CASES OF SYPHILIS — MINNESOTA — 1946 THROUGH 1961

Year	Total Blood Spec. Tested (1000's) No.	Total Cases Reported No.	Infectious Primary and Secondary No.	Asymptomatic Early and Late Latent Asympto-CNS No.	Late Active Cardiovascular CNS and Other No.	Congenital No.	Type Not Known No.
1946	291*	1844	671	780	245	60	88
1947	252	1370	431	621	246	44	28
1948	259	926	177	527	181	32	9
1949	236	720	69	473	136	31	11
1950	272*	618	61	390	132	22	13
1951	314*	563	44	371	124	17	7
1952	304*	479	50	313	95	19	2
1953	292*	327	11	228	79	8	1
1954	238	289	13	199	61	11	5
1955	231	263	22	159	75	6	1
1956	202	196	21	122	48	5	0
1957	184	203	22	138	38	5	0
1958	160	137	20	87	26	4	0
1959	163	157	46	89	18	3	1
1960	156**	220	73	118	21	8	0
1961	152	319	118	172	19	7	3

* The larger number of specimens tested in 1946 and 1950-1953 was due to STS for the armed services.
** The 156 thousand shown is slightly larger than the number from which the study sample was selected because of specimens tested for the armed services.

data on the sample close to the actual facts except in regard to white vs. non-white. For this reason the data with reference to color are interpreted with caution.

Results

Age Distribution

Table III compares selected age groups and the total group for 1952 and 1960 with reference to: total population tested, number of cases reported, and case yield in terms of the number of specimens tested per case found. The total Minnesota population tested has decreased from 8.1%, to 4.1%; a comparable decrease was observed in the testing of the three older age groups. Only a small percentage of children (0-14 years) were tested in both years, but a decrease from 0.7% in 1952 to 0.2% in 1960 was observed. The age group in which the largest percentage were tested in both years was young adults (age 15-24 years), and the decrease in testing fell only about one-third (15.1% to 10.2%) as compared to the larger decrease in other age groups.

The total number of reported cases included in the studies has decreased from 375 in 1952 to 157 in 1960. This decrease was distributed in all age groups, less marked (from 107 to 87 cases) in age groups up to 40 years, however, and greater (262 to 68 cases) in age groups 40 years and older (see Table III). Accordingly, the number of specimens tested per case found has decreased for the adults in age groups 15 to 39 years but has increased for the age group 40 and older.

Residence

Study of residence of patients indicated that 5.5% or more of residents of the three largest cities (Minneapolis, St. Paul and Duluth) were tested. The area in which the lowest percentage (2.3%) were tested was the comparatively heavily populated southern part of the state. In these 35 southernmost counties of Minnesota (exclusive of the Twin Cities Metropolitan area) only 7 cases of syphilis were reported in 1960.

Sex and Color

Sex and white versus non-white distribution for the total Minnesota population, for the percentage of the population tested, for the cases reported and for the number of specimens tested per

Table II

COMPARISON OF COMPLETENESS OF INFORMATION PROVIDED ON SPECIMEN DATA CARDS IN 1952 AND 1960

Information Item	Data Provided 1952 %	1960 %
Residence	89.2	92.2
Age	88.0	91.3
Color	95.3	94.2
Marital Status	87.9	91.7
Reason for Submitting Specimen	70.4	80.5

case found is shown for 1952 and 1960 in Table IV. In both the white and non-white categories a larger percentage of females was tested than males; but more cases of syphilis were reported for males, thus giving a better case yield (fewer specimens tested per case found) for males than for females. The non-white population in Minnesota has increased from 1.0 to 1.2%, but the percentage tested has fallen from 18.5 to 6.6%. The number of cases reported has decreased, with a case yield of 1 per 64 specimens tested in 1960 as compared to 1 per 82 specimens tested in 1952. In 1960, 29.3% of all reported cases were in the non-white group as compared to 17.3% in 1952.

Type of Syphilis Reported

Cases of syphilis as reported in 1960 by type, age and color are shown in Table V with comparative data for 1952 by type and color. There has been a substantial decrease, approximately 70%, from 1952 to 1960, of cases of late latent, asymptomatic CNS, late active and congenital syphilis. A smaller decrease, roughly 50%, was observed in early latent (from 44 to 24 cases). Infectious syphilis on the other hand increased 70%, from 37 cases in 1952 to 61 in 1960. In 1952 8% of the total cases in whites were infectious syphilis; in 1960 this increased to 39%. In 1952 20% of the total cases in non-whites were infectious syphilis; in 1960 this increased to 44%.

Sex and Marital Status

The total Minnesota population, percentage of the population tested, cases reported, and specimens tested per case found, by sex and marital status, are compared for 1952 and 1960 in Table VI. In all categories shown, the number of specimens tested per case found has increased from 1952 to 1960 except for the single males. In this group 623 specimens were tested per case found in 1952); in 1960 the figure decreased to 379 per case found. In both years and both sexes the marital status which gave the most productive case yield per specimens tested was "widowed and divorced."

Reasons for submitting specimens were given more specifically in 1960 as compared to 1952,

Table III

COMPARISON OF PERCENTAGE OF MINNESOTA POPULATION TESTED AND NUMBER OF SPECIMENS TESTED PER CASE FOUND IN 1952 AND 1960 — AGE DISTRIBUTION

Age Group	Total Population Tested 1952* %	1960* %	Cases Found 1952 No.	1960 No.	Specimens Tested per Case Found 1952 No.	1960 No.
0-14	0.7	0.2	3	0	1897	—**
15 - 24	15.1	10.2	50	39	1269	1162
25 - 39	14.0	7.4	57	48	1566	942
40 - 59	8.3	4.1	146	39	396	769
60+	6.4	3.3	116	29	224	562
All Ages	8.1	4.1	372†	155†	651	896

* 1950 and 1960 census figures are used as 100% respectively.

** No cases found in testing 0.2% of population age 0-14 (1,121,365 population).

† Age not given on 3 case reports in 1952 and 2 case reports in 1960.

Table IV

COMPARISON OF SEROLOGIC TESTING, REPORTED CASES AND CASE YIELD IN 1952 AND 1960: SEX AND WHITE, NONWHITE DISTRIBUTION

	Minnesota Population*		Population Tested		Cases Found		Specimens Tested Per Case Found	
	1950 %	1960 %	1952 %	1960 %	1952 No.	1960 No.	1952 No.	1960 No.
White								
Males	49.8	49.0	7.4	3.0	180	73	620	676
Females	49.2	49.8	8.1	4.7	130	38	924	2111
Both Sexes	99.0	98.8	7.8	3.8	310	111	747	1168
Nonwhite								
Males	0.5	0.6	17.2	5.1	40	27	65	41
Females	0.5	0.6	19.8	8.2	25	19	109	89
Both Sexes	1.0	1.2	18.5	6.6	65	46	82	64

*1950 and 1960 Census Data

primarily because of the use of a new data card with better provisions for this data. Accordingly the 1952 and 1960 information as to the reasons the specimens were submitted are not strictly comparable, as is shown on Table VII. Suspected or possible syphilis was indicated on 0.6% of the data cards in 1952 and 0.9% in 1960. In both years the case yield was high; the specimens tested per case found were 28 and 33 respectively, making this the most productive group tested. In 1960 an additional 0.5% of the data cards on which no reason was indicated gave clinical or historical information indicating that syphilis was suspected. In this group one case was found per 100 specimens tested. These two groups provided 47 cases of syphilis and included 27 of the 61 cases of infectious syphilis reported in 1960.

In 1952, 11.9% of the specimens were from pregnant women. This indicated that an estimated 33% of all pregnancies (80,380 live and stillbirths resulting from an estimated 100,000 pregnancies) were tested in the Department of Health Laboratories. In 1960, 24.6% of the specimens were from pregnant women, indicating that 37,600 pregnant women were tested, or 36% of a potential 105,000 pregnancies (88,581 live and stillbirths). In testing similar proportions of pregnant women, 11 cases of syphilis were found in 1952 and only 5 in 1960.

In 1960, serologic testing for employment constituted 14.6% of all testing and only three cases of syphilis were found; this provided a case yield of one case per 7,400 specimens tested. Because routine serologic test for syphilis prior to employment is designed to locate latent syphilis, it was surprising to observe that two of the three cases found were primary and only one was late latent syphilis. In both primary cases the patients had reported a suspicious lesion to the examining physician prior to the collection of the specimen.

Source of Specimens

In 1960 the majority of specimens were submitted from private physicians' offices (66.2%) and the majority of cases were found by this testing, 88 of 157 cases. The percentage of specimens submitted from hospitals was similar in both years, 24.7% in 1952 and 24.5% in 1960. Because the total number of specimens tested has decreased, these percentages indicate a substantial numerical decrease. In 1952 approximately 68,000 specimens were submitted by hospitals and 142 cases were found; in 1960 this had decreased to approximately 37,500 specimens submitted from hospitals and 61 cases were found. The specimens tested per case found were 483 in 1952 and 611 in 1960. In both 1952 and 1960 the cases found by testing specimens from hospitals were predominantly late latent or late active. The decrease in hospital testing is regrettable, since cases, particularly in these categories, have probably been missed.

Table VI

COMPARISON OF SEROLOGIC TESTING, CASES REPORTED AND CASE YIELD
1952 AND 1960: SEX AND MARITAL STATUS

	Minnesota Population* 1950 %	Minnesota Population* 1960 %	Total Population Tested 1952 %	Total Population Tested 1960 %	Cases Found 1952 No.**	Cases Found 1960 No.***	Specimens Tested Per Case Found 1952 No.	Specimens Tested Per Case Found 1960 No.
Male								
Single	14.8	13.4	10.1	5.3	53	44	623	379
Married	32.5	32.8	10.6	4.4	128	36	589	939
Widowed and Divorced	2.8	2.8	7.8	4.7	39	16	125	194
All Males	50.1	49.0	10.3	4.7	220	96	515	558
Female								
Single	11.3	11.0	9.9	6.3	20	11	1231	1463
Married	32.4	32.8	13.3	8.2	94	24	1010	2620
Widowed and Divorced	6.2	7.2	6.8	4.0	38	19	244	357
All Females	49.9	51.0	11.7	7.2	152	54	847	1589

*1950 and 1960 census data: including only individuals age 14 years and older.
**3 cases eliminated: age 0-4.
***7 cases eliminated: marital status unknown for 4 males and 3 females.

In Table VIII the public health failure rate per 100,000 population for the syphilis-prevention program in Minnesota is shown for the years 1946 through 1961. The concept of this failure rate is based on the premise that the serious damage which a syphilis-control program aims to prevent is limited in general to late active and congenital syphilis. It also is based on the assumption that the cases found in the infectious or latent stages may be treated and serious clinical damage thus prevented. The failure rate has shown a consistent and substantial decrease from 1946 through 1959; the increase in 1960 and 1961 is not statistically significant.

Discussion

The major finding of the 1952 study was the need in Minnesota for routine testing of selected groups rather than indiscriminate routine testing. The current study again emphasizes this need. The most profitable case finding rate continues to be found in the same groups, as follows:

1. Suspected cases, see Table VII
2. Widowed and divorced persons, see Table IV
3. Non-whites, see Tables IV and V
4. All persons over age 40, see Table III

Early in 1955, following the publication of the study of the 1952 cases, a memorandum was included with serologic test for syphilis reports to physicians, in which the routine testing of the above groups as well as of all pregnancies was recommended. The pregnancy group was added, not because of a profitable case-finding yield, but because of special considerations in the prevention of congenital syphilis. The testing of pregnant women also serves a second purpose; it provides a substantial group which can be continuously observed as a sentinel or monitoring group to reveal any unexpected increase in syphilis.

Evidence that there is currently no need to urge indiscriminate routine testing of large groups of Minnesotans was obtained in the testing for employment (see Table VII). Over 22,000 persons in this category were tested, with only three cases of the disease found. Surprisingly two of these were primary. Since these two individuals reported the presence of a suspicious lesion to the examining physician, there was clinical evidence indicating the need to consider syphilis as a diagnosis. Finding only one case of late latent syphilis in these 22,000 individuals was unexpected.

There is little evidence that the recommendations for routine testing of selected groups have been followed. In 1952, 0.6% of the data cards indicated that syphilis was suspected; this represented specimens from about 1500 persons. In 1960, 0.9% of the specimen data cards indicated that syphilis was suspected and on an additional 0.5% of the cards other clinical or historical information was given which suggested the possibility of syphilis. The total of these two groups (1.4%) represented about 2,150 specimens from individuals suspected of having syphilis, which indicates a somewhat higher index of suspicion than in 1952. However, because its manifestations are so protean, syphilis could well be suspected more frequently on clinical or historical information.

In 1960 as compared to 1952 there was no indication of an appreciable increase in testing of persons over age 40 (see Table III) or of widowed or divorced individuals (see Table VI).

Also there was not only no indication of an increase in testing of the non-white group, but of a decrease greater than that in testing as a whole. These data need to be interpreted with caution. The fact that color was not indicated on 5.8% of the data cards in the 1% sample needs special consideration in the interpretation of the data available from specimen cards on which color was marked. With the general concern about including color on any official record it seems reasonable to assume that color was omitted more often for the non-white group. Accordingly the data shown on Table IV may be in error to a considerable extent. Well over 6.6% of the non-white population may have been tested, and the specimens tested per case found may actually be as high as 200 or more, rather than 64 as shown in Table IV. In spite of this inaccuracy the recommendation for extensive testing of the non-white population is justifiable on the basis of the fact that 46 of the total 157 cases found in 1960 were in the 1.2% of the population which is non-white.**

**It is noteworthy that the data for 1961 were similar; 97 of the 319 cases of syphilis reported in 1961 were in the non-white population.

Table VII

COMPARISON OF THE REASONS FOR SUBMITTING SPECIMENS FOR SEROLOGIC TESTS FOR SYPHILIS AS ASSOCIATED WITH YIELD OF REPORTED CASES, IN 1952 AND 1960

REASON	Specimens in Sample 1952 %	Specimens in Sample 1960 %	Cases Found 1952 No.	Cases Found 1960 No.	Specimens Tested Per Case Found 1952 No.	Specimens Tested Per Case Found 1960 No.
Following progress of syphilitic treatment	0.5	0.5	6	0	235	——
Differential Diagnosis		2.4		4		925
Suspected or Possible Syphilis	0.6	0.9	55	40	28	33
Routine						
Pregnancy - undifferentiated	11.9	0.6	11	0	2992	——
Pregnancy - primipara		8.2		0		——
Pregnancy - multipara		15.8		5		4820
Hospital - inpatient		7.4		12		942
Hospital - outpatient		1.7		5		520
Employment		14.6		3		7400
Blood donor		2.2		5		660*
Health Evaluation (no known illness)		18.4		28		1000
Other routine	57.4	7.4**	159	9**	995	1244**
No reason given						
Clinical or historical information suggestive of syphilis		0.5		7		100
No additional information	29.6	19.5†	144	39	566	759

*660 specimens tested per case found would be larger (about 22,000) if we consider also the 106,635 specimens tested at two large donor centers prior to sending selected specimens to the state laboratories.

**Includes: Routine in General Physical Examination, Routine on colored, Premarital and others such as preadoption, etc.

†About one-fourth of the data cards on which no reason was shown for submitting the specimen were from hospitals.

The memorandum to physicians in 1955 also included a strong recommendation for complete information on specimen data cards. As shown on Table II information has been provided more frequently for all items except color. Particularly helpful in the current study was the 10% increase in complete data on the reasons for submitting specimens. About one-fourth of the 19.5% for which no reasons were given were from hospitals; 24.5% of the specimens were submitted by hospitals; only 9.1% of specimen cards indicated "hospital-inpatient" or "hospital-outpatient" as the reason for submitting the specimen.

In May of 1955 a memorandum was sent to the Chief of Staff and the Administrator of all licensed general hospitals. This memorandum presented a detailed analysis of the serologic test for syphilis submitted from hospitals in 1952 and recommended that specimens for serologic test for syphilis be collected from selected hospital patients (selection as previously noted) rather than as a routine procedure on all admissions. Routine testing appeared to be the policy of a few large hospitals at that time, but the majority of hospitals, particularly small ones and those in the southern part of Minnesota, tested less than 10% or even none of their admissions.

In reviewing the serologic test for syphilis for hospital patients in 1960 it appears that the memorandum may have been interpreted as indicating a desire to reduce the State Laboratories serologic test for syphilis service to hospitals, when the intent was to extend and improve this service by recommending patient selection for serologic test for syphilis in all hospitals. Since 1955 several hospitals have markedly reduced the number of serologic tests for syphilis sent to the State Laboratories and in some cases are known to be doing their own testing.

In 1952, diagnostic serologies were done in laboratories other than the Minnesota Department of Health for 21.7% of all new cases reported in Minnesota. In 1960 this percentage had increased to 28.6%. This local testing may provide a more prompt service and is an acceptable procedure, providing that diagnosed cases are reported; however, it should be recognized that there are major advantages to the syphilis control program by having complete information about all suspected or diagnosed cases centralized in the one state agency, where patient interviewing services and contact-tracing activities can be concentrated on the early cases. A simple procedure followed currently by several large hospital laboratories, which effectively provides this centralized epidemiological service, is the sending of a portion of each positively-reacting specimen, with the patient identified on the accompanying data card, to the state laboratories.

The majority of hospitals which were not test-

Table V

CASES OF SYPHILIS AS REPORTED IN 1960 BY TYPE, AGE AND COLOR COMPARED TO 1952 CASES BY TYPE AND COLOR

1960 Reported Cases Included in the Study	Infectious		Asymptomatic			Late Active			Congenital No.	Total No.	White No.	Non-white No.
	Primary No.	Secondary No.	Early Latent No.	Late Latent No.	Asympt. C.N.S. No.	Other C.N.S. No.	Cardio-Vascular No.	Other Late No.				
Age 0-14	0	0	0	0	0	0	0	0	0	0	0	0
15-29	14	19	16	3	0	0	0	0	3	55	36	19
30-39	8	12	5	6	0	0	0	0	1	32	20	12
40-49	3	4	1	3	2	1	0	1	1	16	8	8
50-59	0	1	1	12	3	4	1	1	0	23	22	1
60+	0	0	0	17	3	5	4	0	0	29	25	4
Age Unknown	0	0	1	1	0	0	0	0	0	2	0	2
All Ages	25	36	24	42	8	10	5	2	5	157	111	46
White	17	24	13	33	6	10	5	2	1	111		
Non-white	8	12	11	9	2	0	0	0	4	46		
Comparative 1952 Cases												
All Ages	23	14	44	169	27	42	30	8	18	375	310	65
White	17	7	24	149	25	37	29	8	14	310		
Non-white	6	7	20	20	2	5	1	0	4	65		

Table VIII
PUBLIC HEALTH FAILURE RATE IN MINNESOTA
1946 - 1961

Year	Minnesota Population* in millions	Late Active and Congenital	Failure Rate/100,000 Population
1946	2.8	305	10.8
1947	2.9	290	10.0
1948	2.9	213	7.2
1949	3.0	167	5.6
1950	3.0	154	5.2
1951	3.0	141	4.7
1952	3.1	114	3.7
1953	3.1	87	2.8
1954	3.1	72	2.3
1955	3.2	81	2.5
1956	3.2	53	1.6
1957	3.3	43	1.3
1958	3.4	30	0.9
1959	3.4	21	0.6
1960	3.4	29	0.8
1961	3.5	26	0.7

* Census figures are used for population in 1950 and 1960. For other years estimated population is shown.

ing significant proportions of their patients in 1952, were also not doing so in 1960. Only about 37,500 hospital patients were tested in the Department of Health Laboratories in 1960, which represents only one patient tested in about 14 admissions. Testing of hospital patients in 1960 was a relatively efficient case-finding tool (one case per 611 specimens tested). A more extensive and selective use of this service provided by the State Laboratories is desirable. Selected testing of high case-yield groups of patients admitted but not recently tested would mean a large increase in the use of this service.

Due to incompleteness of the data available, accurate measurement of hospital patient testing cannot be made. In addition the policy in some hospitals is to collect specimens, but to indicate that the report is to be returned to the physician's office; also several large hospitals do extensive serologic test for syphilis in their own laboratories. Nonetheless, when one observes the small proportion of patients tested and the lack of selection in routine testing, it is clear that hospital patient testing has not been done as extensively as is desirable in the face of the current increase in syphilis. Each hospital staff should evaluate its own policy on collection of specimens for serologic test for syphilis and modify the policy if necessary.

Since the beginning of the venereal disease program in 1918 the policy of the Minnesota Department of Health has been to keep the diagnosis and treatment of venereal diseases in the hands of the private physicians. Regulations have been kept to a minimum and are designed to provide the Board of Health with data on the magnitude of the problem on a continuing basis. Thus the efficiency of the services provided to physicians in reducing venereal disease can be evaluated. The "failure rate" calculated for the years 1946 through 1961 (see Table VIII) focuses attention on the clinical types of syphilis which a syphilis control program is designed to prevent. The substantial decrease in the "failure rate" for this time period gives reasonable assurance that this has been a sound program for Minnesota. In the face of the current increase in cases of infectious syphilis there is a need for a higher index of suspicion in selecting patients for serologic test for syphilis in order to keep this "public health failure rate" at its present low level or, if possible, reduce it even further. Each infectious case of syphilis which is not located, diagnosed and treated early is a potential late active case for the future and may cause several other cases which could appear as "public health failures" in the next two decades.

About 28 of the total 220 cases of syphilis reported in 1960 were found through contact-tracing by interviewer-investigators. Since June of 1960 two investigators with special training in venereal disease epidemiology have been loaned to this area by the USPH Service to assist in the venereal disease program. Their service is available to private physicians on request. Further, the assistance these trained investigators offer can help locate even out-of-state contacts and reduce the number of unexamined contacts.

Conclusion and Summary

1. A higher index of suspicion of possible syphilis is needed because of the increase in infectious syphilis in Minnesota and the nation as a whole.

2. In 1952 and 1960 the same segments of the population provided the highest case yield per specimens tested. These population groups should be tested routinely to a much greater degree than was true in 1952 or 1960:
    a. Widowed and divorced

b. Non-white
c. All persons over age 40 years

3. Routine testing during pregnancy is urged in spite of the low case yield, because of the special consideration involved with congenital syphilis and because this provides a large sample of the population to use as a monitor group to reveal any unexpected increase in cases of syphilis.

4. Serologic testing of hospital patients was a neglected area of syphilis case-finding in 1952 and 1960, and an increase in testing of selected patients as indicated in No. 2 is recommended.

5. When blood testing is done in laboratories other than the State Laboratory, a portion of each reactive specimen should be sent to the State Laboratory with properly completed data card. The regulations require the reporting of all cases diagnosed or treated.

6. The current study was aided by complete information on more of the data cards accompanying specimens in 1960 than in 1952.

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Note: Syphilis and Gonorrhea to be continued in next issue.

SODIUM-LOSS SYNDROME

This is a loss or depletion of sodium from the extra-cellular water. This may occur as a result of loss of sodium from the gastrointestinal tract, vomiting, diarrhea, fistula, nasal-gastric suction, or excessive use of exchange resins.

The symptoms include weakness, apathy, lassitude, headache, anorexia, and there may be mental confusion. Thirst is characteristically absent. Shock may result.

The laboratory findings indicate hemo-concentration, elevated hematocrit, a depression in the serum sodium below 135 mev/l and a depression in the serum chloride.

In most patients the treatment consists in the replacement of sodium loss by the administration of sodium chloride. In the chronic sodium-loss cases, hypertonic sodium chloride may be needed.

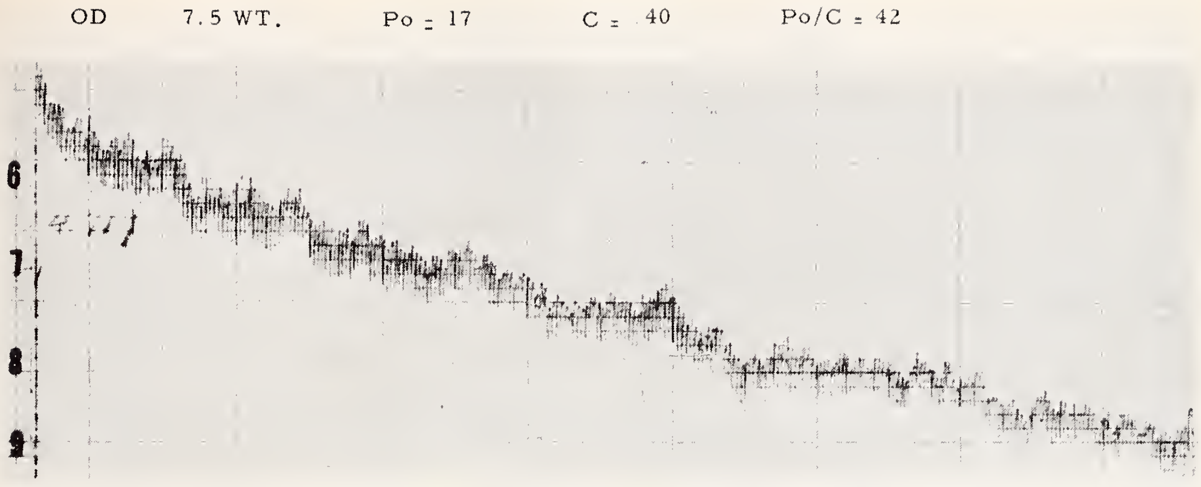
WATER-LOSS SYNDROME

Dehydration occurs as a result of loss of water from the body incident to a decreased intake or an excess loss of water through the lungs, skin, kidneys, or gastrointestinal tract. This may occur as a result of diarrhea, prolonged exposure to heat without water intake, excessive perspiration, and large burns. Water loss can also occur if excessive amounts of water are given too rapidly (200 ml. of water every 10 minutes for seven hours). Thirst and dryness of the mouth are the major clinical symptoms.

The laboratory determinations reveal a rise in the hemacrit and there may be a rise in the other electrolyte values. There is usually a drop in the urinary volume.

The treatment consists in the administration of water alone. If intravenous fluids must be used, a 5% dextrose solution without electrolytes should be used.

Gratitude is the sign of noble souls. — Aesop



NORMAL TONOGRAM

Fig. 1

Tonography

A New Advance in the Diagnosis and Treatment of Glaucoma

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Tonography may be defined as prolonged tonometry and is a method employed to investigate the flow of aqueous humor from the eye. By recording the changes that take place in the intraocular pressure when an electronic tonometer, connected with an amplifier-recorder, is placed upon the anesthetized cornea for four minutes, we have a means of probing the aqueous-humor dynamics of the human eye. This method of investigation was first described by Grant[1] in 1950, who at the same time presented tables increasing the ease of estimating the coefficient of the facility of aqueous outflow which he termed the "C". The facility of outflow, therefore, is a measure of the resistance to the flow of fluid out of the eye.

Since the basic disorder in most glaucomas is an obstruction to the flow of aqueous out of the eye, and since an impaired outflow is one of the earliest changes to take place in glaucoma, even before an elevation of pressure, we now have in tonography a simple and fairly precise means of estimating the facility of aqueous outflow. By no stretch of the imagination is one to assume that tonography will now supplant any of our present methods of glaucoma examination and investigation. Instead, we have in this new method of examination an adjunct to be added

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to our present armamentarium of techniques, which, when combined with clinical acumen, can serve most admirably in the diagnosis of early or preclinical glaucoma. The purpose of this presentation is to demonstrate the clinical applicability of tonography in the treatment and diagnosis of glaucoma.

Values

To simplify understanding of this new method of clinical investigation, all theories and mathematical formulations for calculation of the facility of outflow will be omitted and anyone interested in these will be well-rewarded in reviewing the report of Grant[1] and others. With the tables[2] available today, one may eliminate the tedious and formidable mental calisthenics, and can simply inspect the tonogram and rapidly calculate the values for the intraocular pressure (Po) and the facility of aqueous outflow (C). The "C" value is expressed in terms of cubic millilitres per minute per millimeter of mercury pressure and normally ranges from 0.20 to 0.35 or better. A small number of normals may have a C value lying slightly below 0.20 and these can be separated from the abnormal by the expedient of a water provocative test combined with tonography. As untreated open-angle glaucoma rarely has a C value greater than 0.15 we use the following guide in our clinic. Any C value between 0.15 and 0.19 is automatically suspect until proved otherwise. If the C value falls under 0.15 we are truly concerned, for unless the tracing is made at a time when the diurnal dip is low, untreated glaucoma will rarely present a C value greater than 0.15 except in the very early glaucoma state. It is advisable, therefore, to take repeat tonograms at different times of the day to rule out factors that might be responsible for false low readings.

The Po/C value is en empiric value described by Becker[3] and is a valuable measure as to the presence or absence of glaucoma as well as to the status of the glaucoma control in the patient under therapy. A Po/C value over 100 is strongly suggestive of glaucoma or inadequacy of therapy, whereas a value under 100 suggests absence of glaucoma or adequacy of therapy as the case may be. In the equivocal patient whose pressure (Po) may be, let us say, 20, but whose Po/C may be 105, the addition of a water provocative test will frequently but not always improve the accuracy of the diagnosis.

Tonometers and Recorders

Up until recently the Mueller electronic tonometer was the only one available, but today we find the Crescent electronic tonometer a very useful instrument with the advantage of being transistorized and, therefore, not requiring the so-called warm-up period at present necessitated in the Mueller unit. Unfortunately, the calibration is somewhat uncertain and erratic; but once this, along with a few minor features, has been rectified, it should prove a most valuable electronic tonometer. While it is possible to employ the electronic tonometer without a recorder by taking the reading at the moment of application and at the four-minute interval, one cannot know the quality of this test unless one looks at the tonogram and observes its tracing. To circumvent this source of error some record the pressure every half minute for four minutes; if carefully performed, this is a fairly reliable method, but does not offer the advantages of a recording that presents every defect or movement of the ocular pulse during the four-minute interval. The quality of the tracing can be observed and compared with additional tracings that may be ordered, a procedure not possible unless a recording device is connected to the electronic tonometer. Some have even used the ordinary hand Schiotz tonometer to record changes of pressure at 30-second intervals for a four-minute period; but this is much more difficult and decidedly less accurate, for the electronic tonometer is much more easily maintained in position as well as being easier to read.

Of the recorders available today, and there are many, (Sanborn, Esterline-Angus, Leeds-Northrup, Honeywell-Brown and Crescent) we prefer the Leeds-Northrup for reasons noted in the quality of the tonograms presented. The advent of the Mueller Compact unit and the Crescent recorder and tonometer has now changed the status of tonography from what was once a research tool and a method of investigation serving best in the glaucoma centers of this country, to that of a method of clinical use for every ophthalmologist. In a presentation in 1961[4] the author was firmly convinced that tonography, because of its costly equipment, potential sources of error, and time-consuming period required for technical attainment, would be most suitable in the glaucoma centers or clinics of this country. With the advent of the compact units now available, it is likely that tonography can and will become popular as an office procedure.

To obtain satisfactory, repeatable and valid tracings, several fundamentals must be recognized. Tonography is a simple and fairly precise and practical method of determining the aqueous outflow, but like other laboratory procedures, i. e., the electrocardiogram, the basal metabolism test, and the electroencephalogram, it is subject to potential sources of error as well as to certain technical problems. The use of well-trained personnel, calibrated equipment, and the observance of some fundamentals should result in reliable and repeatable tracings. Ideal surroundings should include location of the site for tonography in an area free from disturbing noises, people talking or telephones ringing. A sound-proofed and air-conditioned room is ideal, with all interruptions eliminated during the course of the tonogram. A colored-light signal can be employed in place of the telephone ring and an atmosphere of quiet and reserve should prevail. Relaxation of the patient, with loosened collar and no dependancy of the head, will prevent false elevated readings of the Po and the C value. To attempt the test on an apprehensive, visibly tense or coughing patient is merely flying into the face of adversity.

The new Mueller unit which compacts the electronic tonometer with an Esterline-Angus recorder is an improved model, but unless the recorder produces a tonometer scale unit division of a minimum of seven millimeters, a deficiency in the electrical output of the tonometer will be indicated and the instrument should be returned to the manufacturer until serviced properly. A common error is to set this compact unit on a metal shelf or metal stand. Because of magnetic factors the avoidance of any metal tables, stands, etc., in the immediate vicinity will lend to better tonograms.

The Crescent recorder represents a decided improvement but will require alteration in the inking system as well as in the chart extruder. With the correction of these minor sources of irritation, this recorder should become a very popular unit, for the tracings are second only to those from the Leeds-Northrup recorder.

Procedure

The patient is seated in a modern-type barber chair to permit relaxation during the explanation of the procedure. The chair is then slowly adjusted to a degree of recumbancy compatible with the comfort of the patient, with the head not permitted to drop back. Two drops of topical anesthetic are then instilled into each eye and in 15 seconds the patient is ready to fixate a small overhead, five-watt, red flashing light or one of several colored crosses made of plastic and fastened to the ceiling. The latter are excellent to position the eyes, the size of the cross being large enough to service an amblyopic eye. The lids are then retracted to avoid pressure on the eye and thus create false elevated readings. The tonometer is next poised over the eye for about 15 to 30 seconds and held about one inch from the cornea to permit the patient to relax, since in this manner he does not know when contact is made. The tonometer is then gently lowered onto the cornea — centrally placed and held vertically during the four minutes of the test.

Present methods of sterilization, while not ideal, seem adequate. We employ lint-free paper to avoid any impairment of friction; this is rolled and pulled through the plunger aperture in the barrel; ether wipe is used before each eye is tested, and a drop of Isoptocetamide is placed in each eye following the test. Obviously, an infected or lacerated eye should not be subjected to this procedure. An eye that has been traumatized or presents a corneal abrasion should not be tested until the corneal epithelium has healed. This may seem ultra-conservative but is a certain means of avoiding an unpleasant situation. The tonofilm tonometer head covering, which is now experimentally available only for the Schiotz tonometer, will soon be obtainable for both the Schiotz and the electronic tonometer and thus afford a sterile sheath for the examination.

With the internist and the general practitioner now beginning to use the Schiotz tonometer as a routine test in the physical examination of the adult, and the medical schools teaching the use of this simple test to aid in the early recognition of glaucoma and thus institute early therapy, it is only a matter of time before the tonometer will become as routine a procedure as the urinalysis or chest X-ray in all adult patients. Our experience reveals that a number of suspect glaucoma patients are referred to this center for definitive diagnosis after having been noted as possible suspects by the general practitioner or internist who has referred these patients to an ophthalmologist. Tonography, therefore, affords an excellent means of diagnosing the early or equivocal glaucoma suspect who, in most instances, will be noticed much sooner by the family physician than by the ophthalmologist, since the opportunity to do so is proportionally much greater.

Clinical Application

Diagnosis: Fig. 1 represents a normal tonogram with the typical steep downward slope, not present in Fig. 2, which represents a classic open-angle untreated glaucoma. Note the elevated Po, the reduced C and the elevated Po/C well over 100. The loss of the downward slope is pathognomonic of poor outflow efficiency even without investigation of the figures.

Since tonography has been employed in the study of glaucoma, we find that in the early stages some patients may present a normal or near-normal Po value and at the same time show a defective C value. It would appear that some eyes can adjust for the outflow impairment by a decrease in secretion of the aqueous humor. The ability of the tonogram to detect this early evidence of an abnormality in the outflow mechanism, long before any of the usual signs are elicited, makes this new method of examination a most valuable means of early diagnosis. Fig. 3 represents such a case, for if one were to consider only the tonometer reading (Po), one would most assuredly inform the patient that all is well, and proper diagnosis would be missed. With the tonogram, one is alerted, however; for we now note in the C and Po/C value two positive signs present long before any manifest evidence of glaucoma can be seen. Given time, this patient will eventually show a rise in the Po value as well as other signs to corroborate the diagnosis.

Patients referred to our Center in most instances are accompanied by blanks furnished by us, listing the services desired by the referring ophthalmologist. A common question is, "Does my patient have glaucoma?" Fig. 3 is typical of such a patient, for with seemingly-normal or equivocal tensions, this patient without the tonogram would be unaware of impending ocular tragedy. To be valid the tonogram must be repeatable within reasonable limits, and all patients are, therefore, subjected to a minimum of two tonograms. In the case under discussion, a water-provocative test was employed to further embarass the outflow disorder, and Fig. 4 now reveals a rise in the Po to 30, a fall in the C to 0.06, and a marked increase in the Po/C value to 500. The results of this water provocative are unquestionably positive. Unfortunately, all cases of glaucoma are not this easily delineated, and we find now and then, even after the water-drinking test, equivocal results with nominal effect on the Po, C or Po/C values. This type of patient warrants continued observation and repeat tonograms.

Tonography is of particular value in screening the members of families with a known history of glaucoma, for in this group the incidence is

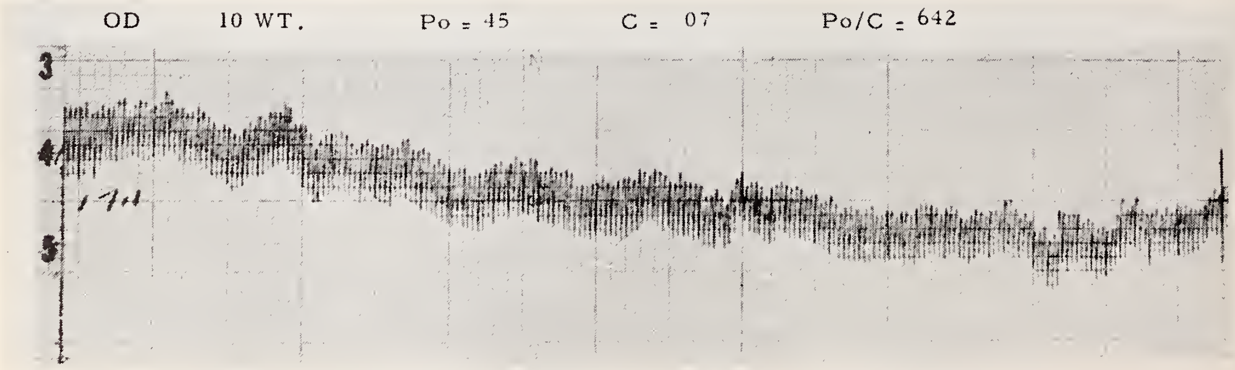

Fig. 2 Classic Open-angle Glaucoma, Untreated. Note flattening of slope.

decidedly higher than in the normal population. Tonography now offers a method of finding early evidence of an outflow impairment, where a Po/C value greater than 100 may be the first sign of the clinical evidence of glaucoma.

Treatment

The tonogram while offering considerable help in the early diagnosis of glaucoma, is invaluable for evaluating the adequacy or inadequacy of medical therapy in the glaucoma patient.

The patient who presents a falling C value in the presence of normal or equivocal Po values will, if continued without intensification of therapy, progress to eventual elevation of the Po as well as loss of field. In the patient who already has a field loss, Po values should be reduced to at least 15mm Hg or less, for the nerve fibres in these damaged nerveheads will not withstand the pressures tolerated by the normal nervehead. If medical therapy does not produce the desired results, and one has employed the new potent anticholinesterase preparations, Glaucon, and the new long-acting Diamox-sustained release capsule, the last resort will be surgical intervention.

In the patient whose tension is normalized by surgery or topical medication, the periodic examination of the tonogram may afford the first indication of a failure in therapy. The presence of a flattening of the curve or a fall in the C or rise in the Po/C value should alert the physician to the possibility of an impending rise in the Po value as well as subsequent field loss. A falling C value always precedes the elevation of the Po, and the intensification of therapy at this stage will convert a lowered C to a normal C and assure a better prognosis for the patient.

The tonogram can be used as a test for the diagnosis as well as the therapeutic value of the miotic employed, for in the normal patient the use of pilocarpine will not result in a significant improvement of the C, while in the glaucoma patient this effect may be marked.

By no stretch of the imagination should anyone presume that tonography will replace any of the standard tests already in use, nor should one employ the single tonogram as a means of determining the diagnosis or the therapy, medical or surgical. It would be the quintessence of assininity to ascribe to a single tonogram all of the qualities assumed by this statement. One must never lose sight of that most remarkable facility, good clinical judgement and acuity. The tonogram is merely an adjunct to our other findings, and when combined with all the clinical data accumulated, it can afford and does offer, a most remarkable service to the ophthalmologist.

The tonogram offers unparalleled service in the case of narrow-angle glaucoma insofar as it is able to act as a surgical guide, far superior to any of the previous methods of evaluation. In this type of glaucoma, whether normalized by medication or when normal or near-normal between attacks, the tonogram with a normal C value advises us that a peripheral iridectomy

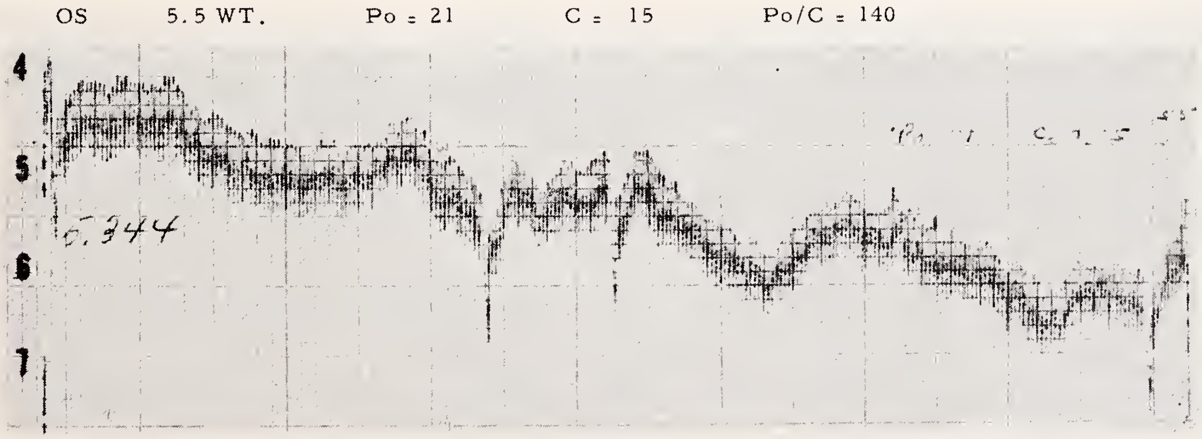

Fig. 3 Normal Po, but impaired C & suspicious Po/C. Note occasional dropped cardiac beat. Note Fig. 4

would be successful, whereas the presence of an impaired C would suggest a filtering procedure as the most likely to succeed. The patient on maximum therapy who does not present a C value of 0.20, and who, when therapy is stopped, shows a C value of less than 0.15 will do better with a filtering procedure. The patient who presents in-between attacks a C value of better than 0.15 when therapy is discontinued, will in all likelihood do well with a peripheral iridectomy. Gonioscopy should always be employed in conjunction with this method of evaluation and should not be supplanted as a test procedure.

In the secondary glaucomas under therapy with one of the carbonic anhydrase inhibitors, we now can use the tonogram as our guide to ascertain the improvement that is taking place in the outflow channels; for, as the C value improves, one can reduce the medication by adjusting the dosage and completely stop all oral medication when the C has returned to normal. The tonogram now offers a precise method of guiding our therapy in this type of glaucoma.

Sources of Error

Unless scrupulous attention is given to equipment, its installation and daily calibration, to the quality of training given the technician, and to all the many details that go into the making of a good tracing, the beginner may find tonography a rather frustrating and exasperating experience. Operator error in our hands appears to be the greatest source of nonreadable tonograms and we, therefore, without qualification strongly urge that a technician be trained to perform these tests and that she be given opportunity to do these frequently.

Scleral rigidity may be a source of error and is pertinent academically, since it occurs in about two to four per cent of patients. In order to avoid this error we now do routine applanation tonometry in most instances immediately preceding the tonogram, since this method of measuring the Po eliminates the scleral rigidity factor. The nomogram is then employed for calculation of the E value and correction for it if present. Tonography in this manner is a means of obtaining a correct diagnosis in the occasional patient with abnormal scleral rigidity.

Factors Affecting The Tonogram

To the beginner in this new mode of examination some of the bizarre or a typical tracings can be most trying, and a brief description of some of these will do much to eliminate some of the trepidation that may be encountered. In an occasional tonogram one may note a sharp rise followed by a rather sharp fall in the tracing during the first minute. This is now attributed to blood pressure changes secondary to anticipation on the part of the patient and/or ocular muscle spasm induced when the tonometer is seen descending onto the eye. Blushing or vasodilation resulting from drugs can result in a transient rise in the pressure, while movements of the eye, holding of the breath, swallowing, sighing, straining or pain can also affect the quality and validity of the tonogram. Cardiac arrythmias show up as decided irregularities in the tracing of the ocular pulse and have occasionally been the first indication to the patient of any cardiac disorder.

Summary

Tonography offers an improved and practical contribution to the diagnosis and management of the glaucomas. Tonographic tracings at times may afford the only means of discovering very early stages of glaucoma, since outflow defects can be elicited long before any other significant changes will take place. When combined with conventional tests tonography may be utilized to the

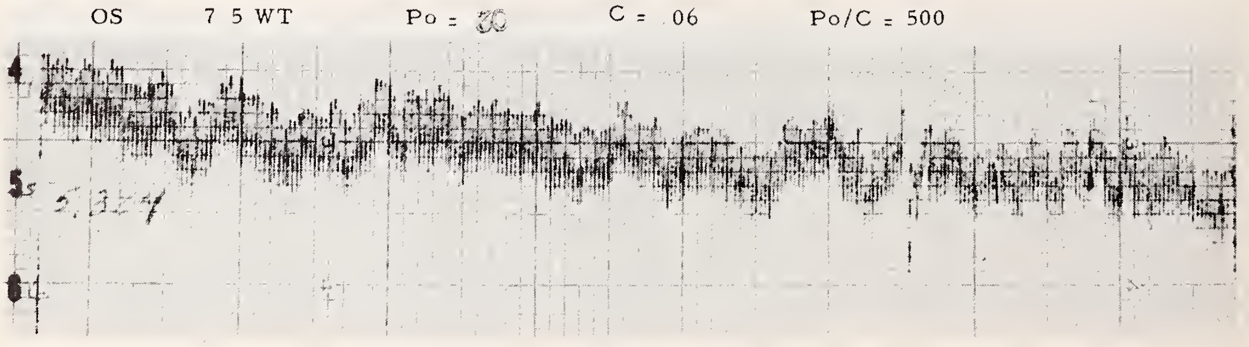

Fig. 4 Same patient after 1000 cc water

best advantage not only for diagnosis but to evaluate the success or failure of medical or surgical therapy. It is an invaluable means of assessing the adequacy or inadequacy of medical therapy, the prognosis as to possible impending field loss or surgical failure, and the type of surgery offering the greatest likelihood for success. The finding of an abnormal tonogram alerts the physician to the need for close follow-up studies or the intensification of therapy, in order to prevent the blindness that can eventuate; for this is the ultimate aim of all diagnostic and therapeutic measures. Despite the potential inaccuracies that exist in the tonographic evaluation of the coefficient of the facility of outflow, they do not invalidate this method of examination. While most ideally suited for the glaucoma clinics in the medical centers, the availability of compact economical units, combined with well-trained personnel and rigid observations as to calibration and detail, should make this method of examination increasingly reliable for the ophthalmologist's office.

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ANSWER TO WHAT'S YOUR DIAGNOSIS

(From page 1231)

Under endotracheal anesthesia a left carotid angiogram was done, beautifully demonstrating displacement of the middle cerebral vessels characteristic of a large subdural hematoma in the left fronto-parietal region (Figure 1). This area was trephined and a good deal of xanthochromic blood came out under increased pressure. His improvement was dramatic and within 24 hours he had returned to complete consciousness. Within four days he was up and around with no trace of paralysis and reflexes back to normal.

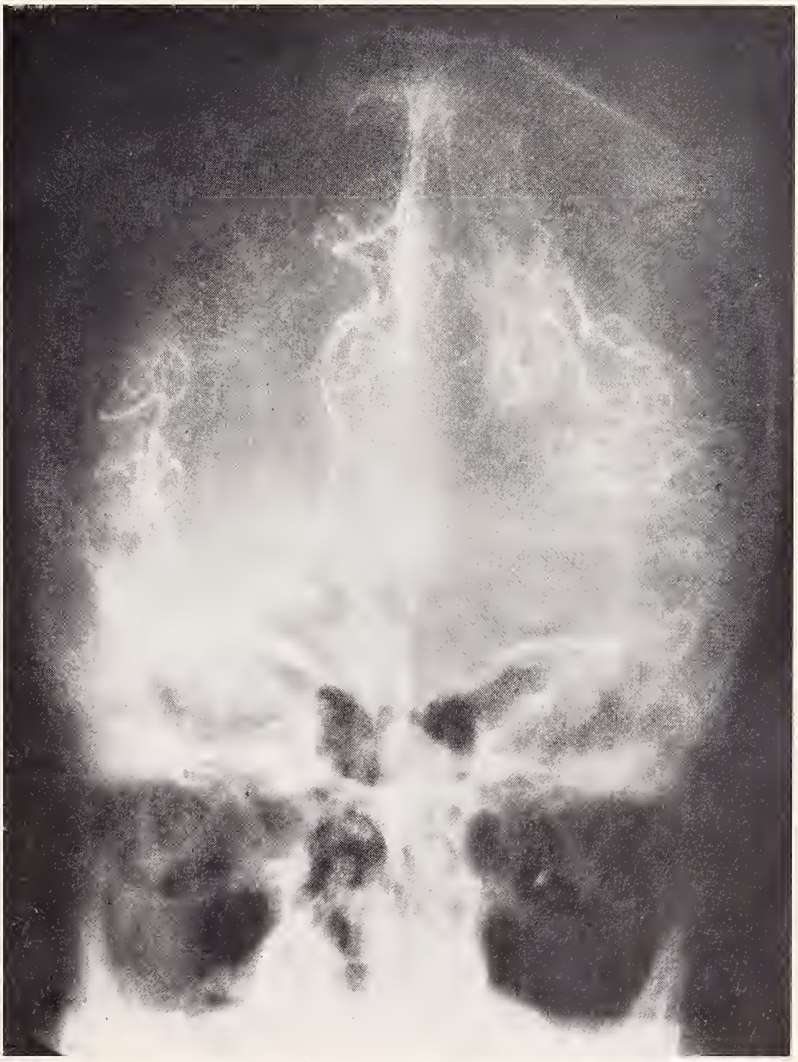

Figure 1. Angiogram demonstrating displacement of middle cerebral vessels

FAT EMBOLIZATION

In spite of extensive investigation during recent years the question of fat embolization is controversial. The author discusses this serious complication in a manner aiming to stimulate further thinking and work in this field. Practicing clinicians will find the clinical material of great interest and usefulness.

THEODORE A. PETERSON, M.D.*
Minneapolis, Minnesota

FAT EMBOLISM is a condition the diagnosis and treatment of which approaches mysticism in the present state of our knowledge. Incomplete, inconclusive and inapplicable experimental studies combine with many contradictory clinical observations to produce an extremely nebulous image of this entity. The best we can hope to do is to define a few of the parameters of the disease and to state that a few concepts previously held are almost certainly false.

"Fat emboli result from embolization of fatty bone marrow arising as a result of fractures." This is a common conception and teaching in medical schools today. However, it now seems well established that: 1) Fat emboli are almost certainly not bone morrow. 2) Fat emboli are as common in nonosseous trauma as they are in fractures.

It is difficult to describe a so-called typical case of fat embolus, but for purposes of easier discussion later I shall present a composite of several writers' concept of a "typical case." The patient is usually a severely-injured adult. The symptoms and signs of fat emboli generally arise between four and eleven days post-injury, and can be conveniently divided into systemic and pulmonary, depending upon the location of the emboli. Pulmonary signs generally include dyspnea, cough, cyanosis, increased respiratory rate, and occasionally bloody sputum. Free fat droplets can often be found in the sputum.

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*Minneapolis General Hospital

Pulmonary fat embolus is generally considered to be quite common, and is thought by many to have clinical significance in only a minority of cases. Systemic fat emboli, however, are seen relatively infrequently but are of greater clinical significance. Systemic fat embolization is nearly always associated with a heavy and symptomatic pulmonary fat embolization. Signs of systemic fat embolization include shock, fever, delirium, irritability, and petechia. Diagnostic tests include biopsy (renal, skin), fat droplets in retinal vessels, and fat droplets in urine. Occasionally hemolysis is seen, resulting in jaundice, and hyperbilirubinuria. This is thought to be due to increased serum lipase which results in lysis of red cell membranes.

Early History

Probably the first report of fat emboli in any form is from the University of Lisbon (Portugal) in 1644.[1] Here Portugese scientists injected milk and cream intraveneously into dogs. It is doubtful that these workers realized that they were producing fat emboli. Their scientific observations are extremely scanty by today's standards; they noted, however, that very few dogs survived the experiment.

Zenker in 1862 described what probably is the first case of fat emboli where the entity was recognized and described: A report of a patient with multiple fractures resulting from a railroad accident. Zenker presents typical-sounding case history and irrefutable findings at postmortem, and this work is generally referred to as the beginning of our knowledge of fat embolism.

In 1886 Bush[1] introduced a coagulating wire loop into the marrow cavity of rabbits' femurs and was consistently able to find fat droplets in lung capillaries following this maneuver. Later he injected dyed fat into tibial marrow cavities and observed these dyed fat droplets in the lungs, but none in the lymphatics or lymph nodes.

Another early piece of work was reported in 1894 by Ribbert;[1] in his study he fractured rabbit femurs and tibiae by a gradually increasing pressure. In these cases no fat emboli could be found. Continuing the study he produced trauma to rabbits' hind limbs by tapping with a mallet so as to produce soft tissue trauma without fractures. Finding fat emboli in 95% of these animals, he concluded that fractures were not necessary to produce fat emboli.

Buerger in 1910 reported 100 consecutive autopsies in patients with serious bone trauma. Pulmonary fat emboli were present in 99 of these cases, renal fat emboli in 78.[1]

Testing for Fat

It is generally considered that to be significant fat droplets in tissues must be at least 40 microns in size. In order to study tissues for fat emboli special techniques must be utilized because routine fixation removes fat. The most satisfactory method of studying tissues is frozen section and fat stain.

Probably the most readily available test in the diagnosis of fat emboli is the urine examination for fat, but several basic principles must be observed to be assured of a valid test.[2] First, the collection of the sample is best done with an inlying catheter. Since fat floats on water, it is essential that the bladder be entirely empty following the collection of the sample. The urine must be collected in a clean glass container. Once in the laboratory the urine should be transferred to a volumetric flask and allowed to stand in a refrigerator for one hour, which allows fat droplets to rise to the surface and cools them so that if present in large amounts solid fats can be seen. From this point two methods of further study are available. First, a bacteriologic loop can be dipped into the urine and flamed. A loud snap coupled with the yellow flame is indicative of fat. A more satisfactory method is a smear of the urine stained with Sudan III. Another test recently introduced is the serum lipase determination, as lipase is often increased in cases of fat embolism. The etiology or significance of this rise is not entirely clear, however.

Etiology

It is not possible at this time to make an all-inclusive statement concerning the etiology of fat emboli. Many theories have been proposed.

From Bone Marrow

The first theory of merit is the time honored hypothesis that fat emboli result from embolization of bone marrow. At present this seems quite unlikely. No investigator to date has been able to identify any marrow elements in fat emboli. Indirect evidence refuting this theory is derived from studies dealing with intramedullary fixation of bones. Certainly placement of a Kuntcher or Lotte's nail causes a maximal disruption of marrow substance. Yet, in carefully controlled studies of these cases, fat emboli are no more common when intramedullary fixation is used than when the fracture is treated by external fixation.

From Injured Tissue

A second theory of the etiology is that fat emboli arise by a simple mechanical means in injured tissue. Proponents of this theory contend that when tissue is traumatized arteries and veins are torn. Arteries pump blood into the area of trauma forcing muscle cells, myoglobin and fat into open veins. This theory, however, relies on faulty mechanical principles for, if arteries pump blood into injured tissue it seems likely that veins would be forced to collapse under the pressure. In cases of fracture this theory is somewhat more tenable, since marrow sinusoids would not collapse with increasing pressure. It is interesting to note that, analysis of fat emboli (the emboli themselves) reveals 30-40% of the fat to be cholesterol or cholesterol esters. Marrow fat and tissue depot fat are less than 1% cholesterol,[3] which tends to indicate that fat emboli are derived from a source other than marrow or depot fat, namely plasma lipids. A somewhat more tenable variation of this theory proposes a change in the character of fat with trauma, the more unsaturated fats becoming fluid and thereby more easily forced into venous channels.

Metabolic Changes

Other theories as to the etiology of fat emboli contend that injury produces a change in local fat metabolism or a generalized change in either fat metabolism or emulsification, thus rendering plasma lipids more susceptible to precipitation in parenchymatous organs. These theories will be ellaborated later.

The majority of research published in the field of fat embolism is oriented toward the etiology and therapy of the condition. In an extremely interesting study by Dr. Angus McLachlin in 1939,[4] he reports on the injecting of human fat intravenously into rabbits. He determined that the mean lethal dose was 0.9 grams per kilogram, but if the fat was first hydrolized, the mean lethal dose became 0.07 mg., that is, 1/12 as much. He further found that 0.5 grams of neutral fat injected repeatedly at intervals of several days was not fatal even though pulmonary symptoms were regularly produced. A further study revealed that repeated sublethal injections of neutral fat caused the mean lethal dose to be elevated. The mechanism of this phenomenon is not understood. In dogs the mean lethal dose for neutral fat is approximately two grams per kilogram, this being equivalent to a 150 gram dose for a 70 kg. man. The average femur was found to contain 60 grams of marrow. Hence, it seems unlikely that fat emboli arising solely from a fractured femur could cause death.

Dr. L. Peltier, now of the University of Kansas (formerly of the University of Minnesota) has done many experimental and clinical studies on the problems of fat emboli. He has shown conclusively both in dogs and in human surgical cases the value of the avascular tourniquet in extremity surgery. In 100 consecutive bone surgical cases not using the tourniquet, fat droplets of over 40 micra in size were found in 62.[5] In another study in dogs he was unable to find fat droplets in cases where a tourniquet was used, while dogs traumatized in a similar manner but without a tourniquet regularly exhibited fat emboli. Dr. Peltier has also been very interested in serum lipase in association with fat emboli[6] and has shown increased lipase in conjunction with cases of fat emboli. He believes the lipase originates in the lung. Mineral oil or starch given intravenously resulted in a considerable and consistent elevation of serum lipase.

It has long been known that heparin resulted in a marked "clearing" of hyperlipemic plasma. This was found to be due to an emulsifying effect of heparin on serum lipids. Several authors have tried heparin for treating fat emboli, but all have found disappointing results. Heparin regularly produces an acceleration of death in experimental animals subjected to fat emboli.[7]

In an extensive study by Johnson and Svanborg in 1956[8] the authors established a method of regularly producing fat emboli by the use of an ischemic tourniquet or by the use of a crushing injury. Both groups of animals exhibited 1) increased plasma lipids, 2) increased plasma lipid phosphorus, and 3) increased serum cholesterol. The rise following injury was proportional in both groups. All animals were studied at postmortem and all exhibited fat emboli in lungs and other parenchymatous organs. Esterase (an enzyme causing deposition of fat) did not rise. It is, therefore, concluded that the rise in serum lipids seen was not due to decreased deposition of lipids but rather to an increased mobilization. These authors conclude that fat emboli are a result of a disturbance of plasma lipid emulsification and that fat deposited in organs remote from the site of an injury is a result of this generalized disturbance. They further believe that fat emboli are merely a finding in the complex consisting of tissue injury, shock, and change of lipid metabolism.

A clinical observation of note is that patients with hyperglycemia (i.e. diabetis) often exhibit a lipemia of 30 to 50 times normal but do not exhibit fat emboli.[2]

Some recent research in rabbits indicates that following trauma there is increased mobilization of depot fats along with decreased utilization of plasma lipids resulting in an over-all increase in plasma lipids and a quantitative change, rendering them less stable and more liable to droplet formation and precipitation.[8]

In a clinical study Dixon in 1958 reported on 500 consecutive autopsies studied specifically for fat emboli,[9] twenty-seven per cent of which had fat emboli. Fat emboli were present in 93% of all traumatic cases, in 24% of purely soft tissue trauma cases, and in 100% of alcoholic cirrhosis cases. Of 68 children only five had fat emboli. This is explained by the qualitative difference in fat of children versus adults; that is, adult fat is mostly olein, which is a liquid at body temperatures.[10] In this same series other cases of fat emboli resulted from severe burns, carbon tetrachloride poisoning, and rapid pressure decompression. In a further study of 51 hospital admissions for alcoholic psychosis 48 had demonstrable fat emboli.[9]

Summary

1. There is no unanimity of opinion regarding the etiology of fat emboli. It would seem, however, that fat emboli are not simply bits of fatty marrow but rather precipitations of plasma lipids due to some metabolic or emulsification change resulting from injury.

2. There is general agreement that the use of the avascular tourniquet in extremity surgery decreases the frequency of fat emboli.

3. There is no uniformly effective formula for adequate therapy of fat emboli. General measures recommended include a) rapid, gentle manipulation of fractures; b) maximal, rigid immobilization of fractures; c) use of an anesthetic agent which is not a fat solvent.

4. In dealing with traumatic cases exhibiting fever, delirium, pulmonary symptoms or petechia not otherwise adequately explained, fat embolism should be considered.

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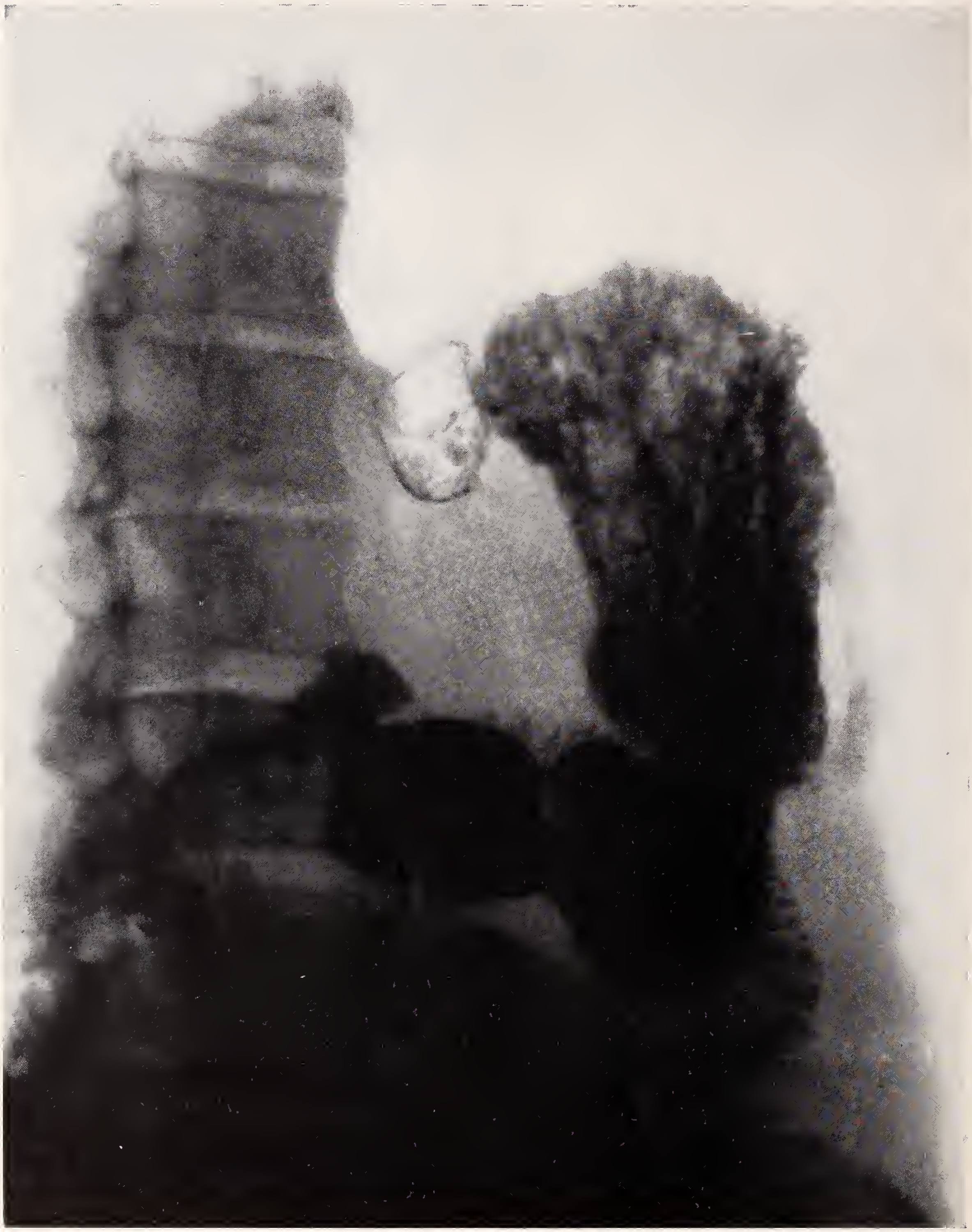

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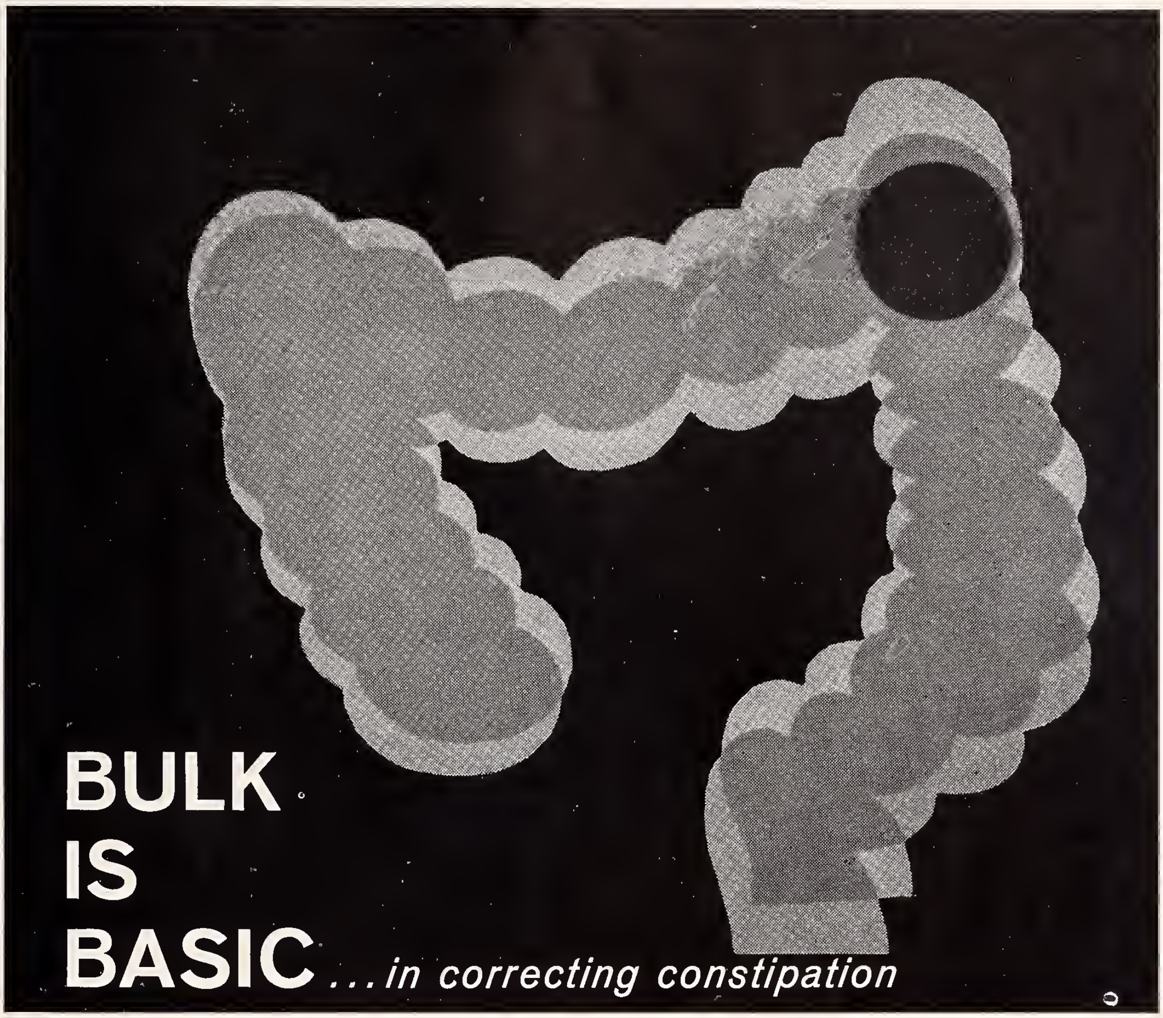

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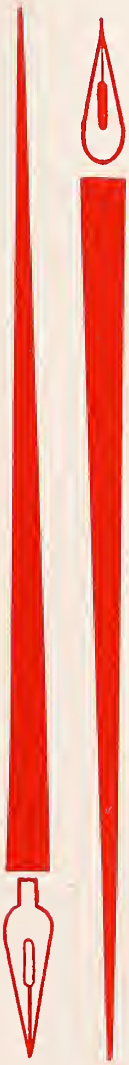
Editorials

The Tower of Babel



The AMWA, one of the numerous AMA for SA, has announced, at its SM at the S-PH in Wash. D. C., the publication of the first CRD on MA ever published. It can be procured from the Mich OPD of PM&R at the UH of Ann Arbor, Mich for the sum of $2.00 plus 25c for p&hc; all of which signifies that a medical abbreviation dictionary has just been published and can be purchased from the Department of Physical Medicine, Ann Arbor, Michigan, for the sum of $2.00 plus 25c for postage and handling charges.

There is no doubt that such a dictionary is now needed. The alphabetical abbreviations system has become so widely used that it is beginning to assume the confusing proportions of a Tower of Babel* in the land of Shimar. From the early and lowly IOU and IWW with their shady or cryptic implications up to the official respectability of FDR's AAA, NRA, PWA, CCC, WPA, etc., the years produced only a few sporadic alphabetical sequences; but the precedent and example of the 1930s have proved so contagious during recent years that facility and ingenuity with capital initial letters have become limitless. Every region, every institution, every organization, nigh almost every individual — each has a respective set of alphabetical conundrums unintelligible to others.

It seems that we delight in inventing them. We even attempt to pronounce them. To understand them, unless they happen to be indigenous to our own particular field of interest, would require the sorting and calculating ingenuity of a complex IBM machine.

Why should we endeavor to perpetuate such unintelligible modern hieroglyphics? Printer's ink and bond paper are not so expensive as to preclude the complete spelling of titles, names, and organizations; and few people are so miserly with their words as to begrudge the use of a few extra syllables. Nor is time of the essence.

Minnesota Medicine will, wherever possible, refrain from the use of the alphabet system of expression and will endeavor to use the English language fully and completely —

COR, BS, MD, MS, Ph.D, FACS, Ed MM.

* Genesis XI, 9.

Anticoagulants

Anticoagulants are not new, having appeared in ancient medicine in the form of leech therapy. To this day even in Western Europe, though perhaps not in university centers, one will find a score of leeches applied over the enlarged liver of the patient with a failing heart. At the turn of this century Hirudin, the active anticoagulative principle in leech heads, was isolated. Although not extensively used clinically, Hirudin was employed in many physiological experiments during the first half of the century. In 1916 heparin was discovered by MacLean and has since occupied a prominent position experimentally and clinically as a short-term anticoagulant. The most common

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currently used anticoagulant, dicumarol, resulted from the studies of a fatal hemorrhagic disease in cattle associated with ingestion of spoiled clover and demonstrated by Link et al. to be due to coumadin, a substance later produced synthetically in 1939. With this achievement and with the simple means of Quick's prothrombin determination, clinical application of long-term anticoagulation has become practical.[1]

By far the greatest application of long-term anticoagulation has been in the therapy of coronary disease, in myocardial infarction, and in coronary insufficiency. In myocardial infarction, this procedure has become so popular as to make it practically routine therapy in the hands of most physicians. Thomes, in the October 1962 MINNESOTA MEDICINE, recommends its use on a permanent basis in angina and in infarction of the myocardium, and predicts that long-term anticoagulation will be used even more extensively in the future. He quotes five studies, including his own, demonstrating the reduction of mortality and morbidity by the use of anticoagulation in coronary disease.

There is no definite agreement in recent medical reports that anticoagulation will reduce either mortality or morbidity in myocardial infarction;[2, 3, 4, 5,] however, there have been no reports known to this writer that the use of anticoagulation has increased mortality in coronary disease. Every clinician, embarked upon an extensive use of long-term anticoagulation, will find iatrogenic morbidity in his anticoagulated patients; but usually the hemorrhagic complications are innocuous; hematuria, subcutaneous hemorrhage, mild gastrointestinal blood loss. However, whether truly or falsely, severe and fatal gastrointestinal, intracoronary, myocardial, and cerebral hemorrhages have been attributed to anticoagulants. An abuse of anticoagulants is the subject of this month's "What's your Diagnosis" elsewhere in this issue.

Hemorrhagic complications can arise in patients maintained in the so-called therapeutic range. It is particularly important in long-term anticoagulant therapy of heart patients to control the medication carefully and accurately, because the occurrence of heart failure is associated with decreased tolerance to anticoagulants. Not uncommonly in the anticoagulated patient the first sign of right-sided heart failure is the increase of prothrombin time with no change in the medication. Whatever the conflicting opinion may be, if anticoagulant therapy is to be used in cardiovascular disease, it must be used wisely and every patient must be individually and periodically evaluated lest undesirable and unpredictable sequellae negate the benefits that were intended.

Reuben Berman, M. D.
Minneapolis, Minn.

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In Memoriam

BERNARD J. GALLAGHER

Dr. Bernard J. Gallagher, 73, retired general practitioner in Waseca, died October 6. He was born in Wilton Township and received his degree in medicine from the University of Minnesota.

Dr. Gallagher was known for his activities in community affairs. He continually served on the School Board, the Park Board and was head of the Board of Health. He was a member of the Knights of Columbus, American Legion, Veterans of Foreign Wars, the Waseca County Medical Society, Minnesota State Medical Association, and the American Medical Association.

He is survived by his wife, three daughters, and two sons, one of whom is Dr. William Gallagher of LaCrosse.

FRANK N. KNAPP

Dr. Frank N. Knapp, 74, veteran Duluth eye specialist was found dead at the wheel of his automobile on November 2.

Dr. Knapp was born at Wilton, Maine and received his degree in medicine from the Bowdoin Medical School in Brunswick, Maine. He was a member of the American College of Surgeons, American Academy of Ophthalmology and Oto-Laryngology, St. Louis County Medical Society, American Medical Association and Minnesota State Medical Association.

He is survived by his wife and two children.

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1. Groskloss, H.H., Clancy, C.L., Healey, E.F., McCann, W.J., Maloney, F.D., Loritz, A.F.: Clinical Medicine (Sept.) 1955.

Study involving 287 patients. 261 patients experienced excellent to good results with Bonadoxin for relief of nausea and vomiting of pregnancy. No side effects reported.[1]

2. Albertson, H.A., Trout, Jr., H.H., Daily, F.W.: The American Journal of Surgery (Sept.) 1956.

"As a result of this study, it is our belief that the routine prophylactic use of the combination of meclizine hydrochloride and pyridoxine is a safe and effective method for lessening the incidence of postoperative nausea and vomiting. We are employing this preparation as a routine pre-operative medication."[2]

3. Goldsmith, J.W.: Minn. Med. (Feb.) 1957.

Study involving 620 patients, 537 patients experienced moderate to complete improvement of nausea and vomiting of pregnancy with Bonadoxin. Toxicity and intolerance to the medication in the dosage employed in these studies was zero.[3]

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Study involving 76 pregnant patients with nausea and vomiting. The results indicated an overall response in 70 of 76 patients treated. No side reactions were observed in this clinical study.[4]

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[Bonadoxin] "was found clinically effective in the prevention of pre-operative and postoperative nausea and emesis in 157 patients who underwent ocular surgery, while control drugs alone could not completely eliminate the symptoms. Bonadoxin did not cause side reactions in the preoperative or postoperative phase of this study."[5]

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"Our investigation of this drug indicates that in 88 per cent of the cases satisfactory relief of the distressing symptoms of early pregnancy was obtained without undesirable side effects, including sedation."[6]

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*"The Future in Medicine is Bright for the Young Investigator"**

If the graduates of the University of Minnesota Medical school from the class of 1920 to that of 1950 could be polled concerning the teachers who contributed most to their medical education, their Professor of Pathology, Elexious T. Bell, would be found to occupy a paramount position.

MINNESOTA MEDICINE is currently engaged in presenting brief biographies of some of the great teachers of medicine in the State of Minnesota, and in this series Dr. Bell must be included as one of the greatest. He came to the University of Minnesota at a critical period in the history of the young medical school and has helped it to grow into the commanding position it now enjoys.

Elexious Bell was born August 30, 1880, on a farm in Ralls County, Missouri. His father, John H. Bell, was a physician who conducted his practice from the bags attached to the saddle of his

---

*From the cap and gown day address by E. T. Bell delivered in May 1949.

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For every kind of pruritus—for adults or children—safe, fast-acting CALMITOL Ointment soothes itching on contact, helps prevent secondary trauma caused by scratching. And low-cost, conservative CALMITOL is non-sensitizing. CALMITOL Ointment is available at all pharmacies in 1½ oz. tubes and 1 lb. jars. For more stubborn pruritus, CALMITOL Liquid in bottles of two fluidounces.

THOS. LEEMING & CO., INC., New York 17

CALMITOL®

for anything that itches

horse; he never rode in a car or buggy. It is revealing of the difficulties of practice in a rural area in those days that his chief income was from his farm and not from his practice. Doctors' fees were low: $5.00 for an obstetrics case, or occasionally a calf or a pig at twice the current price in exchange for pills. Dr. E. T. recalls that in those days there were no slick pills or tablets made up by pharmaceutical houses; Dr. John measured quinine and calomel (the favorite remedies) by guess.

Dr. John and Mrs. Bell had seven children, six of whom were sent to the University of Missouri, where Elexious revealed an interest in mathematics. He also flirted with the idea of becoming a lawyer, but gave this up because he thought he was not a good debater. Medicine then became his final choice.

At the end of his second year in the Missouri Medical School he became a teaching assistant in anatomy under Clarence Jackson, the head of the department there; and shortly thereafter when Jackson went to Germany for graduate work, second assistant Bell found himself in charge. Working fourteen hours a day, teaching gross anatomy and histology, he put in the hardest year of his life.

In 1905 he went to Germany to study embryology at the University of Bonn. At the end of this year he was offered an instructorship in anatomy at John Hopkins but could not accept because he had been paid half salary by the University of Missouri during his leave of absence and was obligated to return.

He came to Minnesota in 1911 as Assistant Professor of Anatomy. Here he spent all day teaching anatomy, relegating research to night work. His greatest contribution at the University of Minnesota was influencing two other Missouri anatomists to come here: Dr. Clarence M. Jackson and Dr. Richard E. Scammon. After one year in anatomy he was appointed Assistant Professor of Pathology, an undeveloped science in 1911. His superb training in anatomy, embryology, and histology was the best kind of preparation for pathology and directed his future research in this field.

In 1920 he was promoted to full Professor and head of the department, a post he held until 1949. Throughout this period, serving under successive deans—Lyon, Scammon, Diehl, and Howard, Dr. Bell's influence in the medical school was enormous. He had the great faculty of recognizing genius in the bud and was influential in the appointment of many of the present leaders of the medical school who were nurtured by him.

E. T. Bell is a man of many talents in medicine: a great anatomist, a great pathologist, and also a great clinician, as he demonstrated to successive classes in the medical school during the past fifty years. The author recalls with awe and admiration the great Wednesday noon sessions held in the anatomy department. These started in the twenties when some of Dr. Bell's early fellows formed the habit of returning to the Anatomy Building with specimens of their most interesting cases to present to Dr. Bell and his staff. At these meetings clinicians came to listen and take part in the discussions.

Another weekly clinical-pathological conference occurred Thursday morning at the Minneapolis General Hospital, where Dr. Bell regularly brought his senior staff, Drs. Clawson and McCartney, and where, as noted physician as well as master pathologist, he correlated clinical with biopsy and autopsy data. These clinical-pathological discussions were among the most effective teaching devices for students of that period.

Among medical students Dr. Bell is best known for his text of pathology. This great work, beginning in mimeographed sheets and continuing through eight editions, is one of his most noteworthy achievements.

Dr. Bell became emeritus at the half century mark, but his output has not diminished. Two editions of his monograph "Renal Diseases" have appeared since his official retirement, and he has done extensive research in hypertension and diabetes mellitus in the last twelve years.

In 1914 he was married to a Minnesotan, Cecile Porcher. They have two children, Elizabeth (Mrs. Richard Ogle) and Robert T. Bell, a mining engineer.

No medical person is held in higher esteem than Tommy Bell by the physicians of Minnesota. He has had an enormous influence in modern pathology and his students occupy positions of importance in many fields of medicine throughout the world.

Reuben Berman, M.D.
Minneapolis, Minn.

For your elderly patients...

an effective GERIATRIC antiarthritic with distinctive Safety Factors

When arthritis afflicts the elderly, it often poses a critical problem in the choice of an effective antiarthritic that will not aggravate other common geriatric conditions . . . such as osteoporosis, hypertension, edema, hyperglycemia, peptic ulcer, renal, cardiac or hepatic damage, latent chronic infection, or emotional instability.

Pabalate-SF, the geriatric antiarthritic, is specially indicated for such patients.

As Ford and Blanchard have reported,[1] Pabalate-SF has "a pronounced antirheumatic effect in the majority of patients with degenerative joint diseases." It produces "a more uniformly sustained [salicylate blood] level for prolonged analgesia and, therefore, is superior to aspirin in the treatment of chronic rheumatic disorders."

Yet Pabalate-SF is marked by distinctive **safety factors:** its potassium salts cannot contribute to sodium retention . . . its enteric coating assures gastric tolerance . . . and its clinical record reflects none of the serious reactions frequently precipitated by therapy with corticosteroids or pyrazolone derivatives. **It has no contraindications except personal idiosyncrasy.**

1. Ford, R. A., and Blanchard, K: Journal-Lancet 78:185, 1958.

Formula: In each persian-rose enteric-coated tablet: potassium salicylate 0.3 Gm., potassium para-aminobenzoate 0.3 Gm., ascorbic acid 50.0 mg.

Also available:

PABALATE, when sodium salts are permissible.

PABALATE-HC, for conservative steroid therapy.

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Pabalate®-SF

–the new, convenient way to prescribe **PABALATE-SODIUM FREE**

arthritis — and osteoporosis
arthritis — and hypertension
arthritis — and hyperglycemia
arthritis — and cardiac insufficiency

Physician's Guide to Wills, Trusts, and Estates

Almost every physician intends to make a will before he dies. Yet, it is a common occurrence for physicians to die without a will. Perhaps this neglect is due to inertia or an aversion to deal with matters which contemplates one's own demise. Ironically, this procrastination is shared with members of the legal profession. Lawyers who have spent a lifetime drawing wills for their clients often die without having drawn their own will.

This guide can help you to minimize the taxes that may be due at your death and to understand the important aspects of a will so that you can plan more wisely for your family's future security.

BERNARD D. HIRSH,
Chicago

PART III
THE FEDERAL ESTATE TAX

WHEN THE federal estate tax was first imposed in 1916 it was of concern only to extremely wealthy people. But since then, the rates have been increased sharply and the exemption reduced. The estate of the average successful doctor was not likely to be materially affected by the estate tax a generation ago. However, postwar inflation has caused the dollar value of real estate and corporate stocks to soar. Consequently, more estates are now exposed either to the tax or higher-estate-tax brackets.

Every taxpayer is acutely aware of his income tax burden because it is a liability which he is required to meet at frequent intervals. In contrast, the tax on the estate which a person accumulates during his lifetime is levied after his death. For this reason, the doctor is likely to be uninformed about death taxes and fail to use the means available to him during his lifetime to reduce such taxes. Your government expects that everyone will arrange his affairs so as to pay no more taxes than he legitimately needs to while he lives and to subject his estate to the least possible taxation when he dies. In planning your estate, it is possible to minimize tax liability by taking appropriate steps to predetermine your estate tax. This, of course, requires the participation of your family attorney.

Nature of the Tax

The federal estate tax is technically a tax on the privilege of transferring property at death, but for practical purposes you can consider it to be a tax on your estate. If your estate is valued at more than $60,000, a federal-estate-tax return, Form 706, must be completed and filed within 15 months after death.

Ordinarily, the value of an estate is determined as of the date of death. However, the executor may elect to value the estate as of the date one year after the decedent's death. If this election is made, property distributed, sold or otherwise disposed of during the year after the decedent's death is valued as of the date of such disposition.

Gross Estate

Your gross estate includes cash, bank deposits, stocks and bonds, debts due you, real property, personal effects, and other assets which you own at the time of your death, such as the following:

Continued

Put your low-back patient back on the payroll

Soma relieves stiffness –stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

> Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A.M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. USUAL DOSAGE: 1 TABLET Q.I.D.

The muscle relaxant with an independent pain-relieving action

SOMA®

(carisoprodol, Wallace)

Wallace Laboratories, Cranbury, New Jersey

Table 3. — Federal Estate Tax Rates

1. Taxable Estate Before $60,000 Exemption	2. Maximum Federal Estate Tax Before Inheritance Tax Credit and Rate on Next Block		3. Maximum Credit for Inheritance Tax and Rate on Next Block	
$ 60,000	$ ----	3%	$ --------	--------
65.000	150	7	--------	--------
70,000	500	11	--------	--------
80.000	1.600	14	--------	--------
90.000	3 000	18	--------	--------
100.000	4.800	22	--------	.8%
110.000	7,000	25	80	.8
120.000	9.500	28	160	.8
150,000	17,900	28	400	1.6
160,000	20 700	30	560	1.6
200,000	32,700	30	1.200	2.4
300,000	62,700	30	3,600	3.2
310,000	65.700	32	3,920	3.2
500,000	126,500	32	10,000	4.0
560,000	145,700	35	12,400	4.0
700,000	194,700	35	18,000	4.8
810,000	233,200	37	23,280	4.8
900,000	266,500	37	27,600	5.6
1,060,000	325,700	39	36,560	5.6
1,100,000	341 300	39	38,800	6.4
1,310,000	423 200	42	52,240	6.4
1,560,000	528.200	45	68,240	6.4
1,600,000	546.200	45	70,800	7.2
2,060.000	753,200	49	103,920	7.2
2,100.000	772,800	49	106,800	8.0
2,560,000	998,200	53	143,600	8.0
2,600 000	1,019,400	53	146,800	8.8
3,060,000	1,263 200	56	187,280	8.8
3,100,000	1,285.600	56	190,800	9.6
3,560.000	1,543,200	59	234,960	9.6
3,600,000	1,566,800	59	238,800	10.4
4,060,000	1,838,200	63	286,640	10.4
4,100,000	1,863.400	63	290,800	11.2
5,060,000	2,468,200	67	398,320	11.2
5,100,000	2,495.000	67	402,800	12.0
6,060,000	3,138,200	70	518,000	12.0
6,100,000	3,166,200	70	522,800	12.8
7,060,000	3,838,200	73	645,680	12.8
7,100,000	3,867,400	73	650,800	13.6
8,060,000	4,568.200	76	781,360	13.6
8,100,000	4,598.600	76	786,800	14.4
9,100,000	5,358,600	76	930,800	15.2
10 060,000	6,088 200	77	1,076,720	15.2
10,100,000	6,119,000	77	1,082,800	16.0

Life Insurance

The proceeds of life insurance which you own or which is payable to your estate.

Jointly owned property

Jointly owned property with the right of survivorship is included in proportion to your contribution to the purchase price.

Medical practice

The value of the good will of your medical practice is included in your gross estate, if it is saleable; likewise your interest in a medical partnership.

Gifts

Any property which you gave away within 3 years of your death in contemplation of death is also included in your gross estate.

Powers of appointment

A power of appointment is a right that is given to someone to designate who is to get the principal or the income from a trust. For example, your deceased father established a trust under his will from which you receive the income for life and the right to designate by your will who is to receive the principal. The value of the property subject to a power of appointment created after Oct. 21, 1942, is considered a part of your gross estate if you do not exercise it during your life.

Continued

Relieves Anxiety and Anxious Depression

The outstanding effectiveness and record of safety with which Miltown relieves anxiety and anxious depression—the type of depression in which either tension or nervousness or insomnia is a prominent symptom — has been clinically authenticated time and again during the past seven years. This, undoubtedly, is one reason why physicians still prescribe meprobamate more often than any other tranquilizer in the world.

Miltown®

meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS® — 400 mg. *unmarked,* coated tablets; and in *sustained-release* capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

WALLACE LABORATORIES / *Cranbury, N. J.*

Clinically proven in over 750 published studies

1 Acts dependably — without causing ataxia or altering sexual function

2 Does not produce Parkinson-like symptoms or liver damage

3 Does not muddle the mind or impair physical activity

CM-7972

Adjusted Gross Estate

Fortunately, your gross estate is not subject to tax. Deduction is allowed for your debts, unpaid income and property taxes, funeral expenses, and the administration costs of settling your estate. Your gross estate less these deductions is called the adjusted gross estate.

Marital Deduction

The value of the property you leave to your wife (or husband) is deductible from your adjusted gross estate to the extent that it does not exceed 50% of your adjusted gross estate. This includes the property you leave to your wife either outright or in a trust which meets certain conditions of the tax law. (Marital trusts are discussed later in this article.) Property left to your wife in excess of the marital deduction is subject to the estate tax.

Tax Based on Value of Estate

The Internal Revenue Code provides for a federal estate tax based on the value of the estate. There is a limited credit for inheritance and estate taxes paid to the state.

The tax rate is fixed according to the amount of the taxable estate as ascertained after deducting from the gross estate the following:

1. Debts, funeral, and administrative expenses.
2. Bequests to charitable, religious, and educational institutions.
3. Marital deduction, not exceeding 50% of adjusted gross estate, for property passing from decedent to his or her spouse.
4. Exemption of $60,000.

Assume that your estate at your death is valued at $250,000 after payment of your debts and expenses. Deducting the exemption of $60,000 leaves a taxable estate of $190,000. In computing the estate tax, the estate tax rates are applied to $190,000. The final tax is reduced by a credit against tax for state death taxes. Using the rates in Table 3, the tax is $45,300. However, you are permitted under the tax law to leave half of your estate to your wife tax-free. Subtracting $125,000 and the $60,000 exemption leaves a taxable estate of $65,000 on which the federal estate tax would amount to $10,700. Thus taking advantage of the marital deduction would save your estate $34,600 in taxes.

Any part of your estate which passes to your wife free of tax under the marital deduction, if not consumed or disposed of during her lifetime, will be subject to tax upon her death. If your wife has little or no property, you may want to plan your estate to take full advantage of the marital deduction. But if your wife's estate is of substantial value, your attorney may find that the combined tax of both estates will be less if you plan your estate to take no marital deduction or less than the maximum allowable.

When a husband and wife die under circumstances in which it cannot be determined who was the survivor, the Internal Revenue Code permits either spouse to create a presumption of survivorship in his or her will. Accordingly, if the marital deduction can save tax, your attorney can include a provision in your will that if you and your wife die under such circumstances, it will be presumed that your wife was the survivor.

The marital deduction is allowed only if the decedent is survived by his or her spouse. Therefore, in planning an estate, consideration should be given to the possibility that the spouse who owns the family property may be the first to die. Trusts and lifetime gifts as a means for providing for this possibility are discussed later in this article.

Charitable Deduction

For income tax purposes there is a limit on the amount which you may deduct for contributions to recognized charities, churches, and tax-exempt schools, hospitals, and research organizations, etc. As a general rule, there is no limitation on the amount of the deduction for estate tax purposes. However, if property rather than cash is contributed, the amount of the contribution may not exceed the value of the property required to be included in the gross estate.

Specific Exemption

In addition to all deductions, including the marital deduction, each estate also has a $60,000 specific exemption. If not more than $60,000 remains after all deductions, no federal estate tax is due.

Taxable Estate

Your taxable estate is the amount that is left after subtracting all deductions and the $60,000 specific exemption. The federal estate tax applies to the taxable estate.

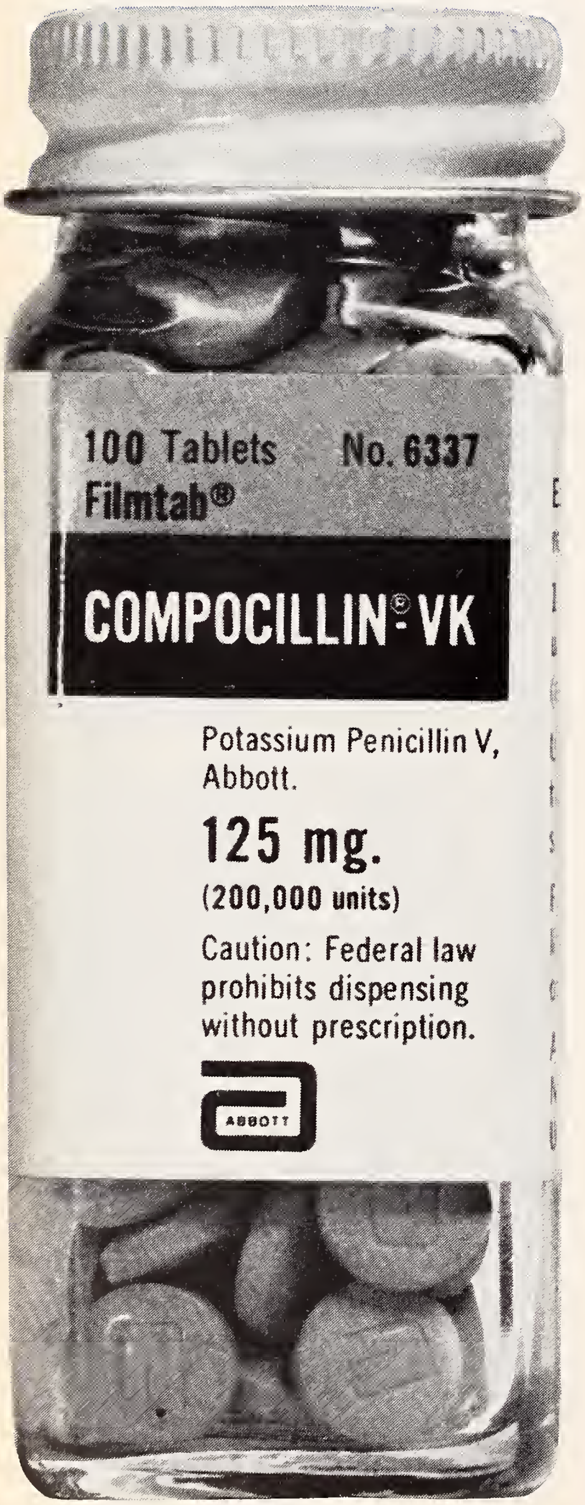
Tax Rates

Although $60,000 of your estate is free of the federal estate tax, thereafter it is subject to progressively higher rates. The gross rates begin at 3% of the first $5,000 of the taxable estate

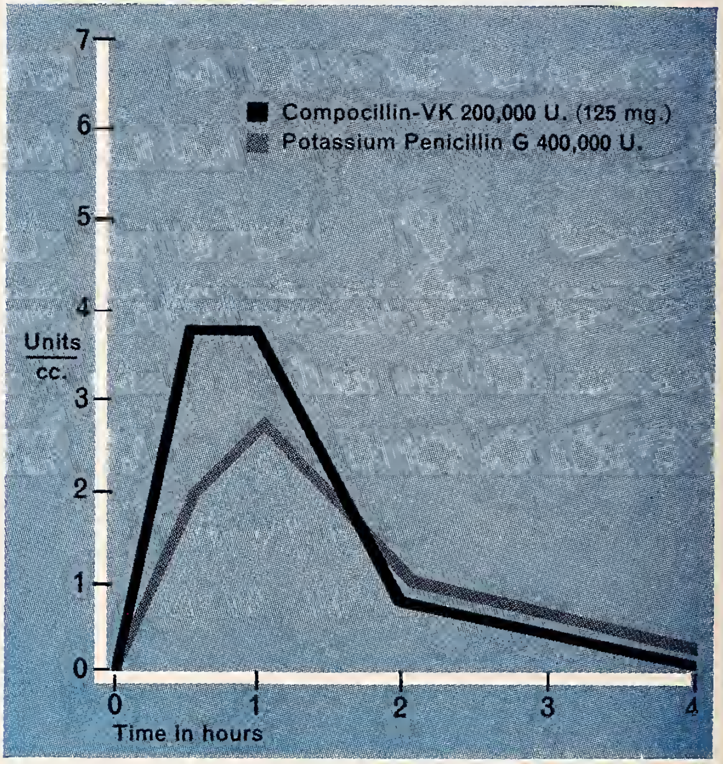
Continued

Here's a penicillin that gives you...

PATIENT ECONOMY WHEN YOU WANT IT


100 Tablets
No. 6337
Filmtab®
COMPOCILLIN®-VK
Potassium Penicillin V, Abbott.
125 mg.
(200,000 units)
Caution: Federal law prohibits dispensing without prescription.
ABBOTT

Single Oral Doses to Fasting Subjects*



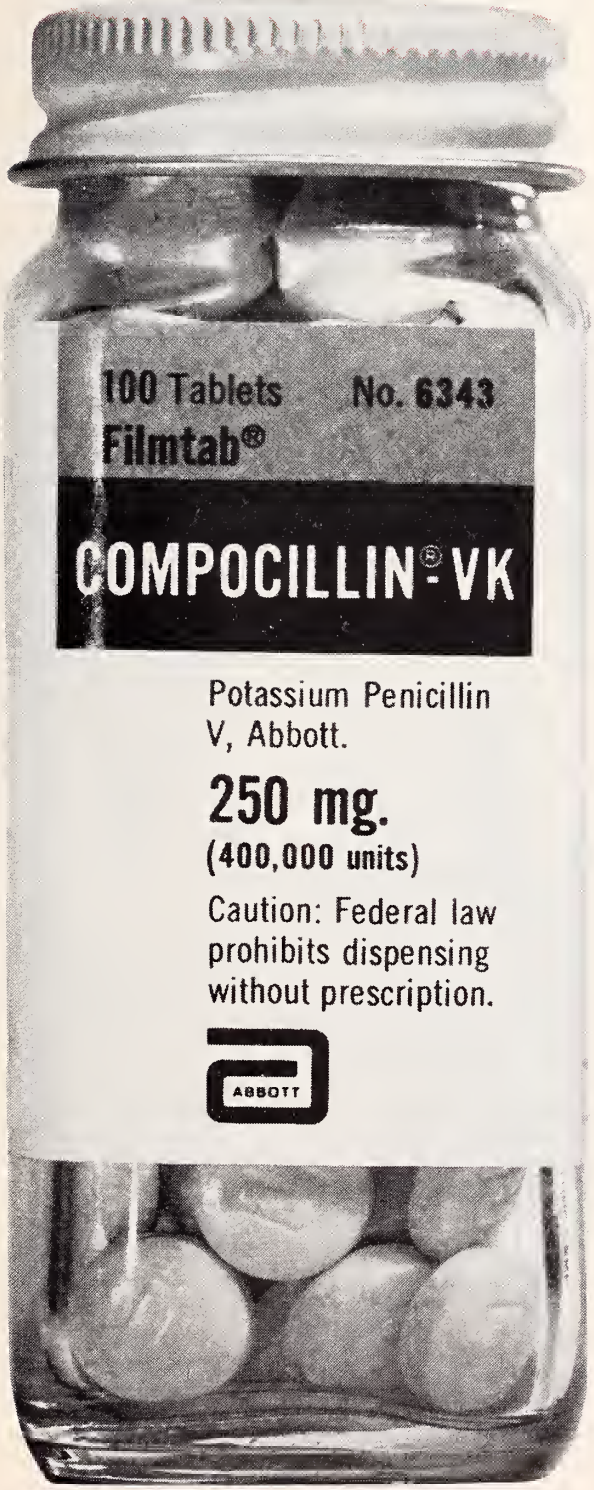
Consider milder bacterial infections

An example might be a respiratory infection. Here economy could be a definite factor in your thinking. In the chart above, you'll see that 200,000 units (125 mg.) of Compocillin VK produces blood levels at least equal to those obtained with 400,000 units of oral penicillin G potassium. This means that in less severe infections, Compocillin-VK may be given at *half* the dosage needed with oral penicillin G—with no sacrifice in blood levels. In these cases, the cost of Compocillin-VK therapy will be no more—and often will be less—than treatment with oral penicillin G.

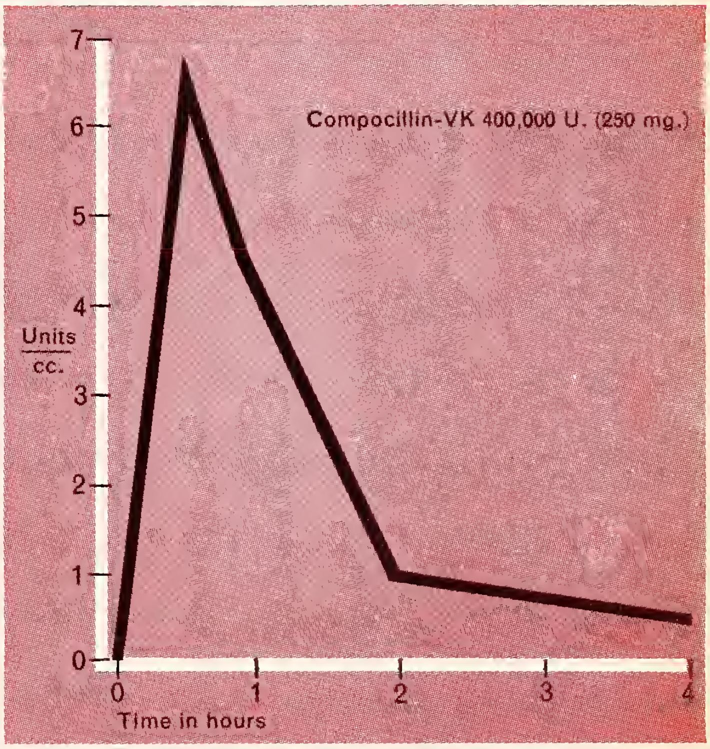
Compocillin-VK—the original potassium penicillin V • In Filmtab (125 and 250 mg.) and cherry-flavored Granules for Oral Suspension

Filmtab—Film-sealed tablets, Abbott: U.S. Pat. No. 2,881,085

PEAK EFFICIENCY WHEN YOU NEED IT


100 Tablets
No. 6343
Filmtab®
COMPOCILLIN®-VK
Potassium Penicillin V, Abbott.
250 mg.
(400,000 units)
Caution: Federal law prohibits dispensing without prescription.
ABBOTT

Single Oral Doses to Fasting Subjects*



Then, for severe infections...

. . . where your primary concern is high peak serum concentrations, you can prescribe Compocillin-VK at *full therapeutic dosage* and get the maximum antibacterial activity possible with an oral penicillin. The chart above shows the rapid peak blood levels obtained with 400,000 units (250 mg.) of Compocillin-VK. Actually, these peaks occur faster—and are higher—than those obtained with intramuscular penicillin G. Indeed, Compocillin-VK has been used in cases previously reserved for parenteral treatment. The safety advantage (oral vs. injectable) goes without saying.

*Chart data from two separate studies completed by the Microbiologic and Medical Departments of Abbott Laboratories.

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

In
intestinal
"grippe"

prompt 4 way check of diarrhea

- Curbs excessive peristalsis
- Adsorbs toxins and gases
- Soothes inflamed mucosa
- Provides intestinal antisepsis

POMALIN

TRADEMARK

Liquid

EFFECTIVE ANTIDIARRHEAL

FORMULA: *Each 15 cc. (tablespoon) contains:*

Sulfaguanidine U.S.P.	2 Gm.
Pectin N.F.	225 mg.
Kaolin	3 Gm.
Opium tincture U.S.P.	0.08 cc.

(equivalent to 2 cc. paregoric)

DOSAGE: Adults: Initially 1 or 2 tablespoons from four to six times daily, or 1 or 2 teaspoons after each loose bowel movement; reduce dosage as diarrhea subsides.

Children: ½ teaspoon (=2.5 cc.) per 15 lb. of body weight every four hours day and night until stools are reduced to five daily, then every eight hours for three days.

SUPPLIED: *Bottles of 16 fl. oz. (raspberry flavor, pink color)*
Exempt Narcotic. Available on Prescription Only.

Winthrop
LABORATORIES
New York 18, N. Y.

Before prescribing be sure to consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

and increase to a top bracket of 77% on taxable estates over $10,000,000. See Table 3.

State Inheritance Tax Credit

The Internal Revenue Code provides a credit against the estate tax for the amount of any estate, inheritance, legacy, or succession taxes *actually* paid to any state or territory or the District of Columbia, on any property included in the gross estate. According to the schedule of credits, if your net estate (after deducting the $60,000 exemption) is more than $40,000, the federal tax is reduced by a credit for the state tax which the estate is required to pay. The credit may not be more than a limited portion of the federal tax even though the state tax may be more than the maximum credit allowable. In all states, except Nevada, which has no tax, the tax is at least as much as the maximum credit allowable.

State taxes may be burdensome to small estates because they usually provide for no exemptions or small exemptions. However, state tax rates are not graduated upward as sharply as federal rates. State inheritance taxes are not uniformly the same, the rates for Minnesota should be obtained from your attorney.

TO BE CONTINUED

Board of Medical Examiners

LICENSE OF MINNEAPOLIS PHYSICIAN SUSPENDED FOR TWO YEARS

Re: In the Matter of the Revocation of the License of Thomas Harrington Johnson, Jr., M. D.

On September 21st, 1962 the Minnesota State Board of Medical Examiners suspended for a period of two years the medical license held by Dr. Thomas H. Johnson, Jr., who maintained an office for the practice of medicine at 412 East 35th St., Minneapolis, Minnesota. Dr. Johnson appeared at a hearing on that date in response to a citation issued by the Board which charged him with immoral, dishonorable and unprofessional conduct as defined by law. The citation further alleged that Dr. Johnson had issued numerous narcotic prescriptions which were not issued within the bona fide practice of medicine because the patient was addicted to the use of drugs and was not suffering from an ailment or condition requiring the prescribing of narcotic drugs; that Dr. Johnson had prescribed narcotic drugs for persons who had been convicted of crimes in connection with violations of laws relating to narcotic drugs and who were not suffering from an ailment requiring the prescribing of narcotic drugs; that he had prescribed excessive amounts of narcotic drugs for patients, and had issued prescriptions calling for narcotic drugs without making a physical examination and without being in personal attendance upon the patient. Dr. Johnson had been previously warned in February 1959 for similar offenses.

Dr. Johnson was born in Crockett, Texas on September 4th, 1918. He served as an enlisted man in the United States Army from 1942 to 1945. Dr. Johnson attended the University of Minnesota and was awarded an M. D. degree in June 1954, being licensed to practice medicine in Minnesota in the following month. Dr. Johnson served an internship at Mount Sinai Hospital in Minneapolis from July 1954 to July 1955.

ST. PAUL WOMAN SENTENCED FOR UNLAWFUL POSSESSION OF DAPRISAL

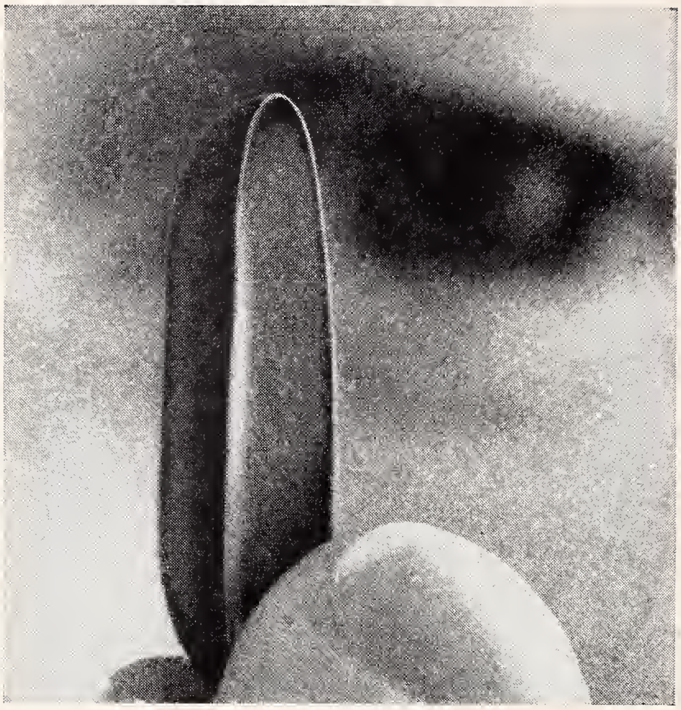
Re: State of Minnesota —vs— Phyllis Duffey

On October 10th, 1962 Phyllis Duffey, 30, 1554 Fellows Lane, St. Paul, Minnesota was sentenced to a term of ninety days in the Ramsey County Jail by the Hon. Robert V. Rensch, Judge of the District Court of Ramsey County, for unlawfully having in her possession a barbital, to-wit: Daprisal. Judge Rensch immediately stayed the execution of the sentence and placed the defendent on probation for a period of one year.

The basis of the charge against Mrs. Duffey was that on May 17th, 1962 she had forged a physician's name to a prescription for 100 tablets of Daprisal, after having taken some prescription blanks from Ancker Hospital. She then ordered the Daprisal over the telephone from a St. Paul pharmacy, giving the forged prescription to the pharmacist when he delivered fifty tablets of the drug to her home. An investigation of the matter disclosed this was the fourth occasion on which the defendant had obtained Daprisal on forged prescriptions at the same drug store and also that she had presented similar prescriptions for compounding at several other St. Paul pharmacies. When Mrs. Duffy was apprehended and questioned she admitted that in the previous four months she had made out twenty prescriptions for either fifty or one hundred tablets of Daprisal, forging the name of the same physician to each prescription. When the defendant was asked why she took Daprisal, she replied: "It is something to help your mood."

The defendant challenged the charge against her when she was first arraigned in St. Paul Municipal Court. Through her attorney she contended that because the pharmacist in the drug store had not analyzed any of the tablets of Daprisal before delivering them to her home, there was no proof that they contained a barbital and therefore she could not possibly be guilty of the unlawful possession of a barbital. However, the Court did not agree with the defendant's contention and bound her over to Ramsey County District Court, where she later entered a plea of guilty to the charge before Judge Rensch on August 27th, 1962. Mrs. Duffey has no training in medicine and holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M. D., Secy.



a sign of Quality...

Only 1/72 of an inch thick, the gelatin shell of a GEVRAL Capsule must withstand temperatures below freezing.

This is but one of many rigid quality control checks we specify to make sure your patient will receive the full vitamin potencies you prescribe or recommend. Along with temperature, breakage, storage and moisture tests of the capsule, repeated assays of each vitamin and mineral ingredient are made during every step of manufacture.

Another quality factor, GEVRAL Capsules are made on Lederle's exclusive ACCOGEL® encapsulation machine which seals dry powder ingredients in a one-piece capsule for better absorption and relative freedom from unpleasant aftertaste.

When you prescribe or recommend *any* Lederle nutritional supplement, you can be sure your patient will receive the full benefit from the potency listed on the label.

GEVRAL® for the entire family

Vitamin-Mineral Nutritional Supplement Lederle

Other Lederle vitamins include: GEVRABON® Geriatric-Vitamin-Mineral Supplement; GEVRAL® T Therapeutic High Potency Vitamins-Minerals-Nutritional Factors; GEVRINE® Geriatric Vitamins-Minerals-Hormones; GEVRESTIN® Geriatric Vitamins-Minerals-Hormones-*d*-Amphetamine; GEVRAL® PROTEIN Vitamin-Mineral-Protein-Nutritional Supplement.

For complete Lederle vitamin formulas, see your Physicians' Desk Reference.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York Lederle

Abstracts and Briefs

GLOSSOPHARYNGEAL NEURALGIA

Glossopharyngeal neuralgia presents with pain either otitic (in and around the ear) or oropharyngeal (side or back of pharynx, back of tongue, soft palate, or tonsil) in location. The pain is extremely variable as regards character, duration and frequency in an individual patient and among patients. Burning, stabbing, cutting, throbbing, pressure or "lightning-like" stabs were descriptive terms used to describe the discomfort in the involved area. Although commonly lasting from 30 seconds to 2 minutes, the pain may persist for up to 20 minutes in some individuals, and often appears in clusters of days' or weeks' duration. Pain-free periods of months or years are commonly noted. Swallowing was the most common precipitating factor, although some attacks are spontaneous or are precipitated by psychic factors, chewing or talking. The pain may be mild or severe and in the latter instance intracranial section of the ninth cranial nerve and the upper one or two fibers of the tenth cranial nerve can be performed and with excellent results. Occasionally, intracranial lesions pressing on the ninth nerve account for the pain.

Robert Siekert, M. D.
Rochester, Minn.

Bohm, E. and Strang, R. R.—"Glossopharyngeal Neuralgia" Brain, 85:371-388, 1962

ACUTE SUPPURATIVE PAROTITIS

A study of 161 collected cases from the records of the University of Oregon Medical School Hospital over a 20 year period has been evaluated by the authors. It would appear that parotitis is again on the increase in incidence, possibly due to the aging population.

Dehydration, malnutrition, oral cancer, or infection were common antecedent causes. Furthermore, more than one-fourth of the patients were receiving antihistamines, phenothiazine derivates, diuretics, or anti-cholinergics which tend to reduce or thicken oral secretions. The majority of the suppurative infections were due to staphylococcus, even in cases of septicemia or bacteremia due to other organisms.

Therapy consists of antibiotics, preferably type-specific, following culture. The culture may be obtained early in the course of the disease by milking a drop of exudate from the parotid duct. Irradiation is of secondary importance; if instituted within the first 24 hours it appears to reduce secretions of the obstructed gland, and, therefore, is of some value when employed early.

Incision was seldom primary therapy. Preferably, an incision for surgical drainage should be made by the third day, on the basis of failure of response to medical therapy. The method of surgical approach is one of turning a skin flap and then entering the capsule of the gland, directing a hemostat in the direction of the course of the branches of the facial nerves. Puncture is made in multiple sites and the wound packed lightly open. The deep lobe is not drained. Early drainage may be achieved by gentle probing of the parotid duct.

This type of therapy has been associated with a sharp decline in the mortality mainly based on type specific anti-biotic therapy.

J. H. Strickler
Minneapolis, Minn.

Krippaehne, W. W., Hunt, T. K., and Dunphy, J. E. 'Acute Suppurative Parotitis. A Study of 161 Cases" Ann Surg, 156:251, Aug. 1962.

DIABETIC NEUROPATHY

Symptoms of diabetic neuropathy were relieved or improved in 9 of 10 patients treated with parenteral procaine for periods of 1 to 24 months. Seven of the 10 showed a marked response, while 2 others showed some improvement but continued to complain of symptoms; the remaining patient failed to respond to procaine. The mode of action whereby parenteral procaine can relieve diabetic neuropathy has not been ascertained.

Although sensitivity to procaine is rare, a preliminary subcutaneous dose of 0.5 ml. was given to rule out sensitivity to this drug. Then, 5 ml. of a 2% solution of procaine hydrochloride was usually given intramuscularly 3 times a week for periods of 1 to 24 months. Modifications of the dosage schedule, which included reduction of doses to twice weekly from the 5th month, were described in the 10 case reports that were presented in this paper.

Control studies included (1) the use of saline placebo injections 3 times a week for 1 month by 5 of the patients and (2) prior unsuccessful long-term treatment with thiamine chloride and parenteral vitamin B12.

Courtesy of Abstracts
Farley Manning Associates
New York, New York

Presley, S. L., Paul, J. T., Ranke, E. J., Amer J Med Sci 243:603, May, 1962.

Continued

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AMMONIA IN PERITONEAL FLUID

Diagnostic abdominal paracentesis has become commonly accepted as a valuable adjunct to the differentiation of obscure acute abdominal disorders. The interpretation of findings, however, has often been confusing, particularly in regard to amylase elevations. The amylase level of peritoneal fluid has not proven to be reliable in the differentiation of pancreatitis from acute perforations of the gastrointestinal tract and from mesenteric vascular occlusions. In this article the author reports on the usefulness of peritoneal fluid ammonia levels in the differential diagnosis of acute intra-abdominal disease.

Diagnostic peritoneal taps are described for 59 patients with comparison of blood amylase and ammonia levels with peritoneal fluid amylase and ammonia levels. All patients who required intraperitoneal exploration had peritoneal fluid ammonia levels above 3.0 gamma per ml, except those with frank intraperitoneal hemorrhage due to blunt trauma.

High peritoneal fluid amylase levels were found in instances of gangrenous or perforated intestine, perforated duodenal ulcer, pancreatitis, and perforated appendix. Normal levels were obtained in simple mechanical bowel obstruction and intraperitoneal hemmorrhage.

Elevations of peritoneal fluid ammonia were found in gangrenous or perforated intestine, perforated ulcer, perforated appendix, and instances of urinary extravasation. The ammonia levels were normal (less than 3.0 gamma/ml) in simple intestinal obstruction, pancreatitis, bleeding from trauma, and ruptured ovarian cyst.

The bulk of ammonia formation in the body occurs in the gastrointestinal tract which accounts for the peritoneal fluid accumulations found in conditions impairing the integrity of the intestinal wall. The high urinary ammonia excretion obviously accounts for elevations in instances of urinary extravasation.

Therefore, peritoneal fluid ammonia levels in excess of 3.0 gamma per ml suggest the presence of strangulated, perforated, or lacerated intestine, perforated gastric or duodenal ulcer, or urinary extravasation, and thus, the need for operative intervention. To the contrary, patients with pancreatitis, although presenting high peritoneal fluid amylase levels had no increase in peritoneal fluid ammonia levels. Thus, the determination of both peritoneal fluid amylase and ammonia levels may be of great value in the differential diagnosis of acute abdominal conditions of uncertain etiology.

The diagnostic peritoneal tap is gaining recognition both as to safety and value as experience with the technic accumulates. This study adds yet another adjunct which should be of great help in clinically differentiating the abdominal catastrophic findings due to pancreatitis, where the management is probably more appropriately non-operative, from those conditions reqniring operative intervention.

Robert N. Hammerstrom, M. D.,
Minneapolis, Minnesota

"Value of Peritoneal Fluid Ammonia Levels in the Differential Diagnosis of the Acute Abdomen" Mansberger, A. R. Ann. Surg. 155-998, June, 1962.

PINWORMS

Pyrvinium pamoate suspension, 5 mg. per kg. body weight, was given by mouth to children 1 to 12 years old in a university housing project. A single dose was highly effective in controlling pinworms but reinfestation was common. Repeating the dose every three weeks partly solved the problem.

Of 166 children given the drug, 9 vomited, compared with only 1 of 88 children given a placebo. Parents should therefore be warned that a few of the children who are given a single dose of pyrvinium pamoate will vomit it. This is particularly important because of the staining tendencies of pyrvinium.

Leukocyte counts, hemoglobin determinations and urinalysis showed no clinically significant effects from single or repeated doses.

The present attitude in the therapy of pinworm infection is to consider that the whole family is infested, and to treat all the members simultaneously. Formerly, courses of treatment ranged from five days to two weeks. These courses may give a period of protection in which the ova in the environment lose their viability. Because of the increased use of single-dose therapy, reinfestation from the environment has become a more important factor.

A suggested curative schedule for pyrvinium pamoate is three doses of 5mg./kg., given at two-week intervals. Further studies are planned to assess the efficacy of this schedule. Attempts to protect noninfested children by giving them repeated doses of pyrvinium pamoate cannot be justified by the results of this study.

Pyrvinium pamoate in coated tablets is useful for older children and adults who would otherwise need unpleasantly large quantities of the suspension. Six adults who were treated with such coated tablets became negative to tests and had no gastrointestinal symptoms.

Courtesy of World Wide Abstracts
Exerpta Medica Foundation
New York, New York

Turner, J. A., Johnson, P. E., J Peds 60/2:243:51

POSTOPERATIVE ANTIBIOTICS

The over-all infection rate of surgical wounds for the summer months of 1952, 1955 and 1956 in the Newark Beth Israel Hospital was nearly 8 percent, despite routine postoperative antibiotics. A coordinated program against operating-room infection was put into effect in 1957.

Of the 6468 major operations studied over a nine-year period, 514 were infected (7.95 percent). These operations were divided into infected, contaminated and clean elective categories, all three either with or without antibiotics.

In each category the infection rate was higher in the patients receiving postoperative antibiotics than in those receiving none. Infection rate was lowest in the nonantibiotic clean elective category, probably because of conscious or unconscious case selection. It is concluded, however, that routine postoperative antibiotics do not prevent wound infection and should be abandoned.

Courtesy of World Wide Abstracts
Exerpta Medica Foundation
New York, New York

Parsonnet, Victor J. Newark Beth Israel Hospital, 12/2:83-98

Continued

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FLUORIDATION FOR CARIES

This paper reviews the findings on dental examination of children at 3 and 6 years after fluoridation of the water supply at New Britain, Connecticut, and adds the findings at completion of the entire 10-year period of the study (1950 to 1960). The findings, which were depicted in numerous figures and tables, indicated a continued gradual decrease during these 10 years in the incidence of dental caries in permanent teeth. The decrease ranged from 63.8% in 6-year-old children to 39.9% in 16-year-olds. Much other information on improvements included the finding that, in the group of 6-year-old children, 29.1% had a caries-free deciduous cuspids and first and second molars in 1961; this was contrasted with a figure of 14.2% for 1951.

A further observation was that the dental improvement did not concern only children born subsequent to the start of fluoridation; data were presented which showed that in the 16-year-old group there was a reduction of about 40% in the expected incidence of dental caries.

Erlenbach, F. M., and Tracy, E. T., Conn Health Bull 75:371, Dec. 1961.

A previous paper reported on the dental state of children in Montgomery and Prince Georges Counties (Maryland) after 5 years of community use of water fluoridated to a level of close to 1.0 p.p.m.; the report showed a substantial inhibition of caries. Essentially all of this inhibitory effect was found in teeth that had erupted after the start of fluoridation. The present paper described in detail the caries patterns in the same population at 7 years after fluoridation of the water supply.

Numerical data, as set forth in tables, provided: (1) proportions of caries-free children in 1952 and in 1959 at each year of age between 5 and 15; (2) expected incidence, as based on 1952 attack rates, and the observed incidence in 1959 of new decayed, missing, and filled teeth by age at the start of fluoridation; and (3) mean numbers of decayed, missing and filled teeth and caries attack rates in girls and boys 13 to 14 years old during 1958-59 by individual tooth type. The over-all results of the study indicated that fluoridation had not significantly reduced the incidence of caries in teeth that had erupted prior to its institution in the community, but that susceptibility of second molars had systematically decreased according to the elapsed time since its institution.

Courtesy of Abstracts
Farley Manning Associates
New York, New York

Russell, A. L. and White, C. L. Public Health Rep. 76:1087 Dec. 1961.

INFANT MORTALITY IN TWINS

Twin pregnancies carry a higher fetal mortality than single births largely because they are more often associated with prematurity. The second twin is commonly said to run a poorer chance of survival than the first, but a nine-year review of twin births at the Memphis hospital shows that the survival rates of first and second twins run about the same.

From 1951 through 1959, 872 twin pregnancies were delivered with an infant mortality of 14.4 percent. The incidence of stillbirths was 4.4 percent compared with 2.8 percent for all the hospital deliveries in the same period. The first twin accounted for 46.6 percent of the stillbirths and the second for 53.4 percent. Similarly, the 175 neonatal deaths were almost equally divided between first and second twins.

There were no deaths in full-term infants delivered operatively. All the deaths occurred in the premature weight group, and the stillborn, neonatal and damaged infant rates ran more or less parallel with the associated prematurity.

Damage at birth occurred about equally in first and second twins. Operative delivery was slightly more often successful in the second twin than the first, perhaps because of the cervix being already prepared by the first twin. The optimum time for delivery of the second twin, judging from this series, is 15 to 20 minutes after the first.

Prematurity is the greatest problem in the management of twin births. There is no sure way of inhibiting the early onset of labor. One suggestion is to admit all the mothers to hospital for a month from the thirtieth week, but this would be prohibitively expensive. The mothers should be cautioned against overactivity in the last two months of pregnancy, and vaginal examinations should be curtailed.

Because of the high incidence of preeclampsia, frequent antepartum evaluation is advisable. Anemia, which is common, should be prevented. Special care should be taken to avoid overnarcotization of these potentially premature infants.

Courtesy of World Wide Abstracts
Exerpta Medica Foundation
New York, New York

Graves, L. R., Obstet Gynec (N Y) Vol. 19/13

CHLOROTHIAZIDE IN TOXEMIA

In the prenatal Clinic of Bellevue Hospital all women in the second and third trimesters of pregnancy, who had gained 5 lb. or more in two weeks and showed increasing edema of the extremities, were given 0.5 Gm. of chlorothiazide twice daily until delivery. They were given no instructions regarding salt restriction, diet or potassium supplements. The average weight loss after a week on chlorothiazide was 3.1 lb. and at completion of treatment 1.7 lb. net.

A few patients complained of nausea and weakness in the first week of treatment, but none had to discontinue the drug. Of 189 patients on chlorothiazide therapy, 12 (6.5 percent) developed toxemia, of whom 1 had eclampsia, 8 mild preeclampsia and 3 severe preeclampsia. All the infants survived, including one set of twins.

In a double-blind study of 267 patients with excessive weight gain and edema, there was no evidence that continuous use of chlorothiazide reduces the incidence or severity of toxemia. When used to promote diuresis in patients who already have incipient or established toxemia, chlorothiazide can produce a profound improvement in the clinical manifestations of the disease.

Courtesy of World Wide Abstracts
Exerpta Medica Foundation
New York, New York

Wesley, A. C., and Douglas, G. W., Obstet Gynec (N Y)

End

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Every general physician encountering and treating fractures will welcome this handy little manual. Dr. Schmeisser clearly describes and illustrates the way in which traction should be applied in the management of most common fractures. He explains various principles involved in each orthopedic situation and then shows exactly how weights and pulleys should be distributed to achieve optimal results. Contents embrace such topics as: *Pelvis sling for fractures of the pelvis*—Head halter for relief of neck pain or temporary immobilization of cervical fracture or dislocation—*Bryant's traction for a fractured femur in a child 1-3 years old*—Insertion of Kirschner wires and Steinmann pins—*Skeletal traction through proximal femur for central fracture dislocation of the hip*—Cervical traction by skull tongs.

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Book Reviews

APPRAISAL OF CURRENT CONCEPTS IN ANESTHESIOLOGY, Editor - John Adrian, pp 279, C. V. Mosby Co., St. Louis, Mo. 1961.

The intended purpose of this book is to present reviews of topics considered by the editor to be pertinent to the study and the clinical practice of anesthesia. Forty-five topics are reviewed by Staff members and trainees from the Department of Anesthesia, Charity Hospital, New Orleans. No attempt at exhaustive reviews is made. Each presentation combines a summary of early thinking with a summary of current concepts from recent literature on the chosen subject. Several reviews, while relevant to the practice of anesthesia, might also prove interesting reading for anyone interested in medical practice, particularly in the areas of Obstetrics, Pulmonary Physiology and Surgery.

One apparent shortcoming, minor though it is, seems worthy of mention. Each review is concluded by the standard procedure of reference listing but there are lapses of integration between the references and the review. In one article, 26 references are listed but only two can be identified specifically with the topic presentation. This tends to discourage or, at least, obstruct the reader who wishes to probe deeper into the subject.

The book accomplishes its goal of reviewing topics of timely interest and is recommended to anesthesiologists, nurse anesthetists and anesthesia trainees.

J. H. Strickler, M. D.
Minneapolis, Minn.

CANCER, DIAGNOSIS - TREATMENT - PROGNOSIS Lauren V. Ackerman, M. D. and Juan A. Del Regato, M. D. — C. V. Mosby Company 3rd Edition 1962

CANCER is undoubtedly the most commonly used reference book or text since the first edition was published in 1947.

Most physicians are acquainted with the very systematic coverage of cancer problems by systems. In each instance the incidence and etiology is followed by diagnostic methods and pathologic characteristics, and a summary of surgical, radiologic, and chemotherapeutic treatment. Clinical evolution and prognosis conclude the format or survey for each lesion. Pertinent reference lists are attached to each chapter and section.

The third edition has been expanded and modernized without any change in the design or arrangement.

This reviewer is very happy to find the modernized and expanded text again ready for the quick reference information so frequently needed for review, and also as a great aid in starting deeper studies.

J. H. Strickler, M. D.
Minneapolis, Minn.

SYSTEM OF OPHTHALMOLOGY VOLUME VII. THE FOUNDATIONS OF OPHTHALMOLOGY. Edited by Sir Stewart Duke-Elder. St. Louis, C. V. Mosby Company, 1962. 829 pages, 471 illustrations, 11 colored plates, section references, cross references, index. Price $30.00.

This is the third published volume of a comprehensive series projected to cover the entire field of ophthalmology, replacing the familiar but outdated *Text Book* series of the same author. This particular volume, which covers the subjects of heredity, pathology, diagnosis and therapeutics, has been published ahead of Volumes III to VI a its material is the most obsolete in the *Text Book*. It is designed as a foundation coverage to save repetition when individual conditions are discussed in other volumes.

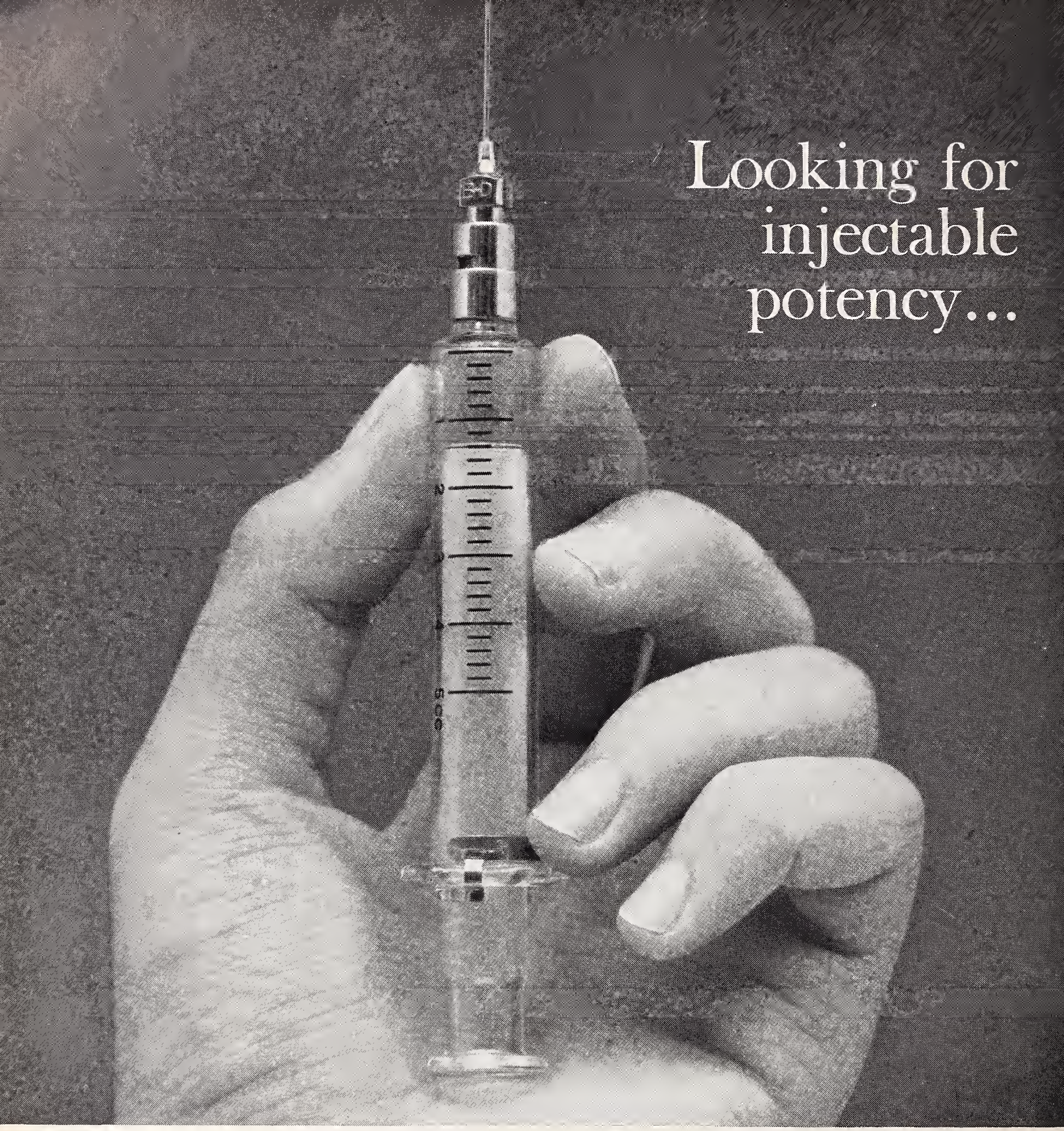
The subject of heredity is most fascinatingly presented by Duke-Elder himself. He covers history, general principles and recent theories such as the DNA chromosome code. Applications are drawn where fitting to eye disorders. The author states that knowledge of hereditary diseases of the eye is more complete than that of any other less accessible organ, which makes ophthalmology a useful approach to this complex field.

Norman Ashton, Professor of Pathology University of London and Director of pathology at the Institute of Ophthalmology of which Duke-Elder is head, has helped prepare the section on pathology. The phenomena of ocular pathology are described in an organized fashion with abundant reference to general pathology.

The third section, dealing with clinical methods of examination and in collaboration with R. J. H. Smith, covers the historical and practical aspects of the myriad of instrumentation with which the ophthalmologist must be familiar. The method of estimating the facility of outflow in glaucoma by tonography, developed in this country in 1950, is unfortunately dismissed without description as too vague and inaccurate.

Finally the editor himself deals in an exhaustive way with the subject of ocular therapeutics. The development and modern usage of all known chemical and physical methods of treatment are described in a most erudite fashion. Frequent reference will no doubt be made to this well organized section. A subsection on radiotherapy by M. Lederman concludes the volume. The argument is advanced that the errors of the early radiotherapists, which rightfully put this form of treatment out of favor for many years, have been overcome by the highly developed techniques in this field which has practical value in modern ocular therapeutics.

William S. McClanahan, M.D.
Minneapolis, Minn.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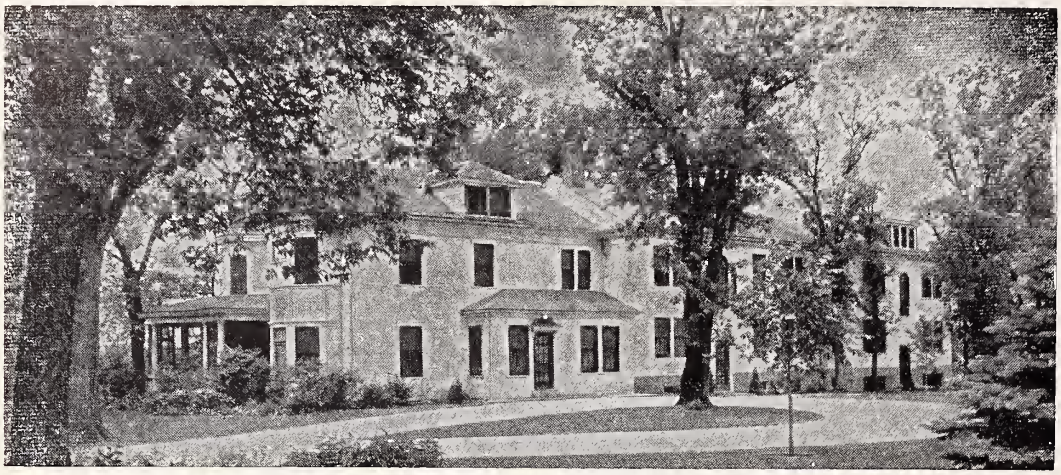A MODERN
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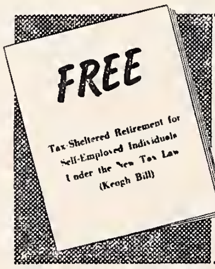
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Staff Room Gossip

FOUNDATION SCHOLARSHIPS

Fifty-seven medical students received 1962 Minnesota Medical Foundation scholarship awards worth a total of $30,250.00 in ceremonies marking the opening of the 73rd academic year of the University of Minnesota Medical School. The scholarships, ranging from $500 to $1,000 each, were won by students who ranked highest in competition based on scholastic achievement and financial need.

Mr. Atherton Bean, president of the International Milling Company, Minneapolis, delivered the 1962 Medical Foundation Lecture. His topic was "My Grandson — Your Patient."

PREGNANCY TEST

On the basis that the endometrium is estrogen-primed, and that the exhibition of a progestational compound will produce the same characteristic secretory change as seen during the menstrual cycle, Sands et al. have devised a clinical test for pregnancy, with the administration of Pro-Duosterone (Roussel Corporation, New York City). One tablet of this preparation is given four times daily for three days. If no bleeding occurs the result of the test is positive indicating pregnancy. If bleeding does occur, then no pregnancy is presumed to exist, and the test is negative. In most instances the test proved to be negative within three days and in some instances up to six days. The longest negative test was found at the end of fourteen days.

The test was found to have an accuracy of approximately 98%.

No side effects of any consequence were encountered and there were no harmful effects in any of the pregnancies in which the test was used.

It appears that the Pro-Duosterone clinical test for pregnancy can be easily administered and carries an accuracy equivalent to that of the Aschheim-Zondek test. This test, furthermore, can be done without the need for a laboratory animal.

Sands, R. X., Mayron, J., Pinski, A. V. "A Novel Test for Pregnancy" N Y State J Med 62:2494, 1962

LIEFCORT for ARTHRITIS
Not Acceptable

Sufferers of arthritis were warned today by the Food and Drug Administration that the drug Liefcort, which is being obtained from Canada, is imminently dangerous and may not legally be imported into the United States.

Liefcort contains potent hormones including estradiol, prednisone and testosterone. The hormones are capable of causing severe toxic effects.

Liefcort was developed by and is being promoted by Robert Liefman, M.D., who is wanted by U.S. Marshals for selling a baldness "cure." Liefman fled to Canada before he could be apprehended and is not licensed to practice medicine there.

DIGITALIS

Up to the entry of the United States into World War I this country had depended largely upon German houses for crude drugs and chemical extracts made from them. The United States was using German-grown digitalis.

Professor Rowntree, of the University of Minnesota, had made pharmaceutical tests of the digitalis grown in Minnesota and found it to be equal, if not superior, to German-grown plants.

During the summer of 1917 the University grew and harvested about two acres of digitalis at a cost of approximately $3,000.—MINNESOTA MEDICINE 1918

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Medical Economics

1,800 ORGANIZATIONS COVER HEALTH CARE

At the end of 1961, there were some 1,800 insuring organizations providing the American public with health insurance for the hospital, surgical, and medical expense resulting from injury or illness and for loss of income accompanying such disability, the Health Insurance Institute reports.

These organizations consisted of insurance companies, Blue Cross-Blue Shield plans, Medical Society-approved plans, and other medical-surgical plans.

The net total of persons with health insurance provided by these organizations was 135,042,000, at the close of last year and some $6.3 billion in health insurance benefits were distributed among these insured persons during 1961.

Last year there were 839 insurance companies actively issuing health insurance policies, up from 819 the year before. Also engaged in providing health insurance protection to the public were some 77 Blue Cross Plans, 69 Blue Shield plans and nearly 800 other plans, such as industrial, community, consumer-sponsored, private group clinics, and college health plans.

A check of a nine-year period, from the end of 1952 to the end of 1961, shows that there has been a significant growth in the number of insurance companies offering health insurance policies, the Institute said.

Over the period there was a 63 percent increase in the over-all number of insurance companies writing health insurance. The number of life insurance companies engaged in the health insurance field rose from 284 companies at the end of 1952 to 571 companies at the close of last year, an increase of 101 per cent.

Casualty Companies

There was a 10 per cent rise in the number of casualty insurance companies writing health insurance over the past nine years. And 17 more insurance companies, issuing only health insurance coverages, entered the field since the end of 1952, an increase of 68 per cent.

Most health insurance coverage is provided by group plans protecting a large number of persons under one policy, such as at places of employment.

Of the more than 135 million Americans with hospital expense insurance at the end of 1961, insurance companies covered a net total of 81 million including 57 million persons protected under group policies. Of the 125 million grand total for surgical insurance, 57 million persons of the 79 million insurance company total had group coverage. The grand total for regular medical insurance was over 92.5 million, with 38 of the 44 million persons with insurance company coverage protected under group plans.

In addition, the Institute said, 31.5 million of the better than 34 million persons with major medical expense insurance are covered under group plans provided by insurance companies and 21 million of the 32 million covered by insurance companies for loss of income have group protection.

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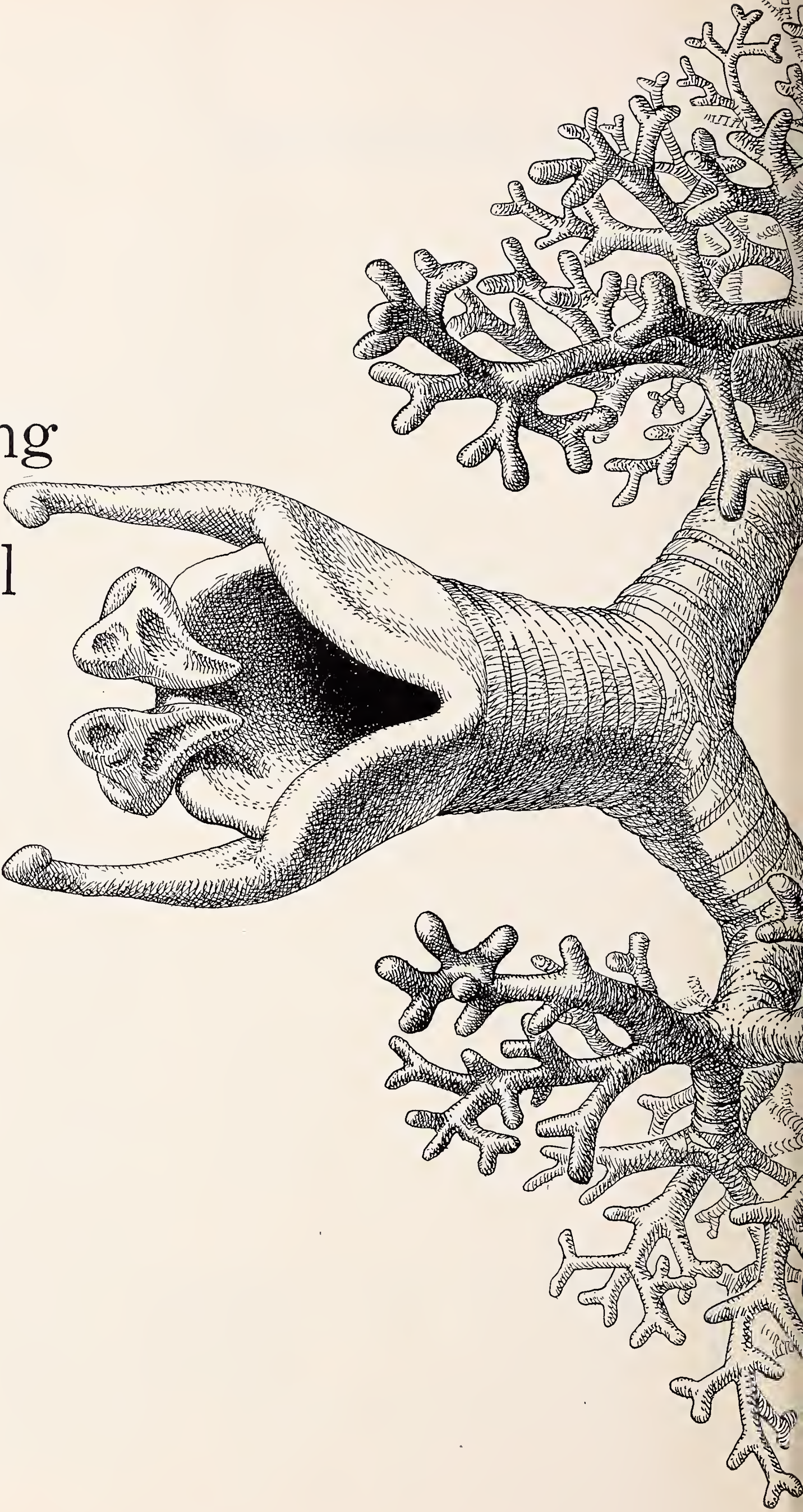

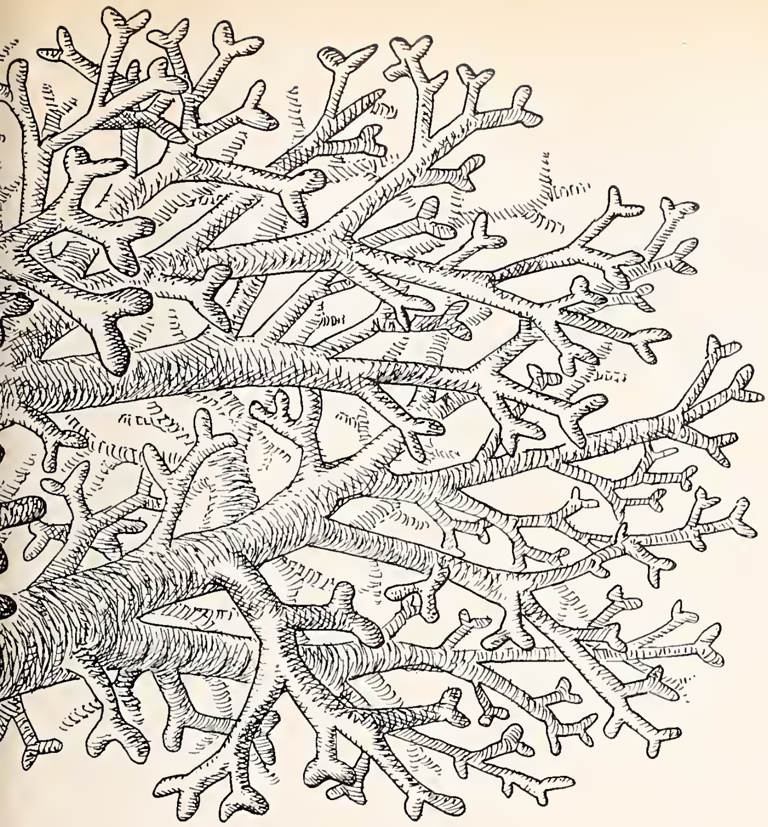

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Usual Dosage: 2 tablets, 4 times a day. Maintenance dosage is frequently lower.

Dispensed in bottles of 40 and 250 tablets.

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The Blue Shield

A few days before Halloween, the public library received a rather unusual series of packages.

Opening the containers, librarians found a peeled torso of a human being, a hand, an eyeball, a stomach, as well as a number of other pieces of the anatomy.

The librarians were quite pleased.

It was no joke at all—for the items were not real.

Instead, they were moulded plastic facsimiles of the human anatomy, and part of what began as a modest venture by Minnesota Blue Shield turned out to be a program of encompassing public interest.

The Mayor of Minneapolis hailed the program as "exciting" and a number of well known scientists have called it "foresighted" and an "imaginative project."

The Minnesota Blue Shield program is called the Living Science Library and consists of basic science equipment and material to be maintained in a place where young students could use them during their leisure. First recipient of the "Library" is the Minneapolis Public Library.

In all there are hundreds of different science materials involved. The equipment and aids are designed especially to encourage science students, from high school to undergraduate work, to pursue health science interests and careers, and especially help those whose interest would be in pursuing a medical career in Minnesota.

The addition of this science collection is in many ways not at all strange for a public library. Through the years, the libraries in many communities have offered services in addition to loaning books and research materials.

The first recipient of the "Living Science Library," the Minneapolis Public Library, is one of these progressive institutions. Within its two-year-old, $8 million building, the Minneapolis Public Library has in addition to more than a million books, a large wing which houses a science museum, planetarium and auditorium.

Basically, the scientific collection consists of more than several hundred different items. Some examples are: animal kingdom sets, which are selected specimens in museum jars ranging from primitive sea creatures to highly complex smaller vertebrates; life history set of the most studied liverwort, Marchantia; five types of Porifera (sponges); an eight-inch spread octopus; five species of spiders; four types of Lepidoptera (moths and butterflies) life history sets of the frog; a set of deciduous tree leaves (40 leaves from commonplace trees); a plant kingdom slide set representing the entire plant kingdom; biology (lower forms) set; invertebrate and comparative vertebrate zoology set; three teaching model microscopes with professional stands and triple nose pieces; models of an enlarged skin section showing cellular structures, hair roots, capillaries and nerves; a plastic model of the human eye (which comes apart for study); a plastic model stomach, hinged in two areas to show structure; a model showing the anatomy of the hand, the wrist and the beginning of the lower arm, with muscles removed in several different layers to reveal the circulatory and nerve supply; and a life-sized human model torso, which can be partially taken apart.

The idea came about as a community relations project. Minnesota Blue Shield, which represents both the medical profession as well as Blue Shield subscribers, felt it had an active duty to further

Continued

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ECONOMICAL In addition, the cost per application of SARDO is low — for only **one** capful per bath is required for therapeutic effect.

PLEASANT Unique pine scent, non-sticky, non-sensitizing, SARDO assures patient cooperation.

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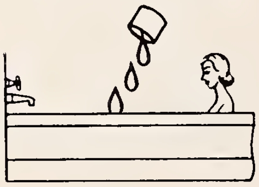

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1. Borota, A., and Grinell, R. N.: J. Amer. Geriatrics Soc., 10:413, 1962. 2. Spoor, H. J.: N. Y. State J. M., 58:3292, 1958. 3. Lubowe, I. I.: Western Med., 1:45, 1960. 4. Weissberg, G.: Clin. Med., 7:1161, 1960. 5. Lieberman, W.: Amer. J. Proctology, 12:374, 1961.

* Pat. Pend. T.M. © 1962 by Sardeau, Inc.

the interest of Minnesota science and medicine.

Investigating several possibilities, Blue Shield decided that the project which would be of most benefit was a facility to help gifted students. And a public library seemed to be the best place to operate such a facility. It also seemed a science project would be a logical extension of the planning and service concept of the library.

To exchange ideas on the science facility at a library, Minnesota Blue Shield talked with many teachers and scientists. All were enthusiastic about the new program. Persons who have commented favorably upon the Blue Shield program were Dr. Jonas Salk; Dr. Warren Weaver, of the Alfred P. Sloan Foundation.

Dr. Athelstan Spilhaus, Dean of the University of Minnesota's Institute of Technology, who recently returned from duty as commissioner of the Science Pavillion at the Seattle World Fair has commented:

". . . congratulations for your foresightedness in providing facilities of this kind. It is an imaginative project and should do much for students who wish to work on scientific projects outside of school hours."

The Mayor of Minneapolis, Arthur Naftalin, who was a former educator at the University of Minnesota, has also commented:

"It is an added source of gratification to express commendation on the opening of the Living Science Library. This should, indeed, be an excellent and exciting addition to our present tools of learning and research. The generosity of Minnesota Blue Shield in donating the present equipment and displays warrants the gratitude of all of us."

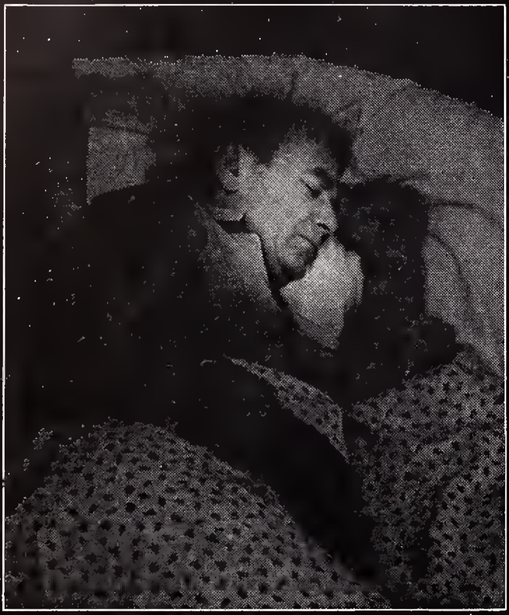
A dedication ceremony was held Nov. 8 at the Library. About 300 science teachers, students, physicians and others were present. Making the presentation for Blue Shield was President, Dr. C. W. Moberg. Also speaking for Blue Shield was Mr. Thomas Paton, Executive Vice President. Frederick C. Kilgour, Yale University, featured speaker for the evening, emphasized the importance of the biological sciences, pointing out that though the "glamour" sciences are attracting many young students the biological sciences have "far more excitement."

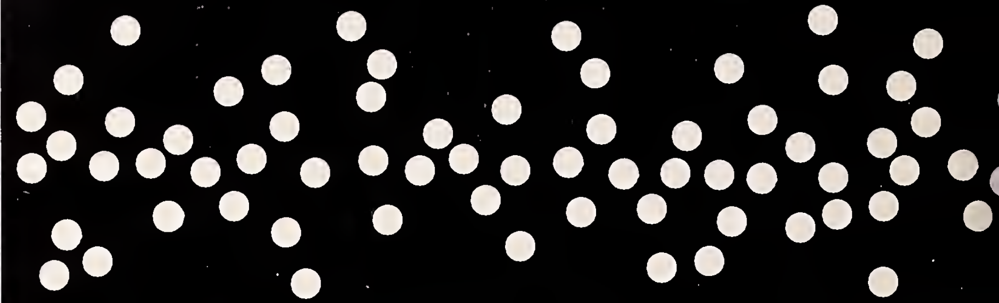
For example, he said, biology is undergoing an "enormously rapid intellectual development" which is now discovering aspects of life "unsuspected 10 years ago." Praising the Blue Shield contribution, Mr. Kilgour said that the Living Science Library will be of great help to the community. Mr. Kilgour is the librarian of the Yale Medical Library and managing editor of the Yale Journal of Biology and Medicine.

Dr. Haddon Carryer, of the Mayo Clinic in Rochester and President of the Minnesota State Medical Association, was an honored guest at the dedication ceremony. Also present were Dr. E. T. Ceder, President of the Hennepin County Medical Society, Mr. Thomas Cook, Executive Secretary of the Hennepin County Medical Society, as well as a number of Directors of Blue Shield.

All in all, there seems to be a great deal of enthusiasm for the Living Science Library. In the future, Blue Shield hopes to continue this project in other communities throughout Minnesota.

Watch for the 1962 Minnesota — Federal Income Tax Guide appearing in the January and February issues of Minnesota Medicine





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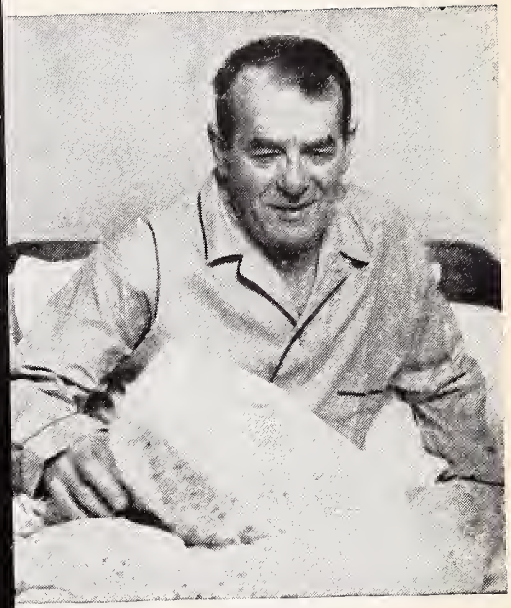

night, the arthritic wakes up comfortable

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Meetings and Announcements

JANUARY 1963

American College of Surgeons, Section Meeting, January 21-23, Hotel Westward Ho., Phoenix, Arizona. Contact the College of Surgeons in Chicago.

National Fire Protection Association Technical Committee Meeting, Hotel Manhattan, New York City, January 21-25. Contact: Association; 60 Batterymarch St.; Boston, Mass.

27th Annual Session of the International Medical Assembly of Southwest Texas, San Antonio, Texas, January 28-30, Granada Hotel. Contact: S. E. Cockrell, Jr.; 202 West French Place; San Antonio.

American Diabetes Association Eleventh Postgraduate Course "Diabetes in Review"—January 16-18, Statler Hilton, Boston; Contact: Association; 1 E. 45th St.; New York.

University of Colorado General Practice Review, January 13-19, in Denver. Contact: Office of Postgraduate Medical Education.

University of Iowa Postgraduate Conference January 8-9, "Obstetrics and Gynecology". Contact: John Gius, M.D.; College of Medicine; Iowa City, Iowa.

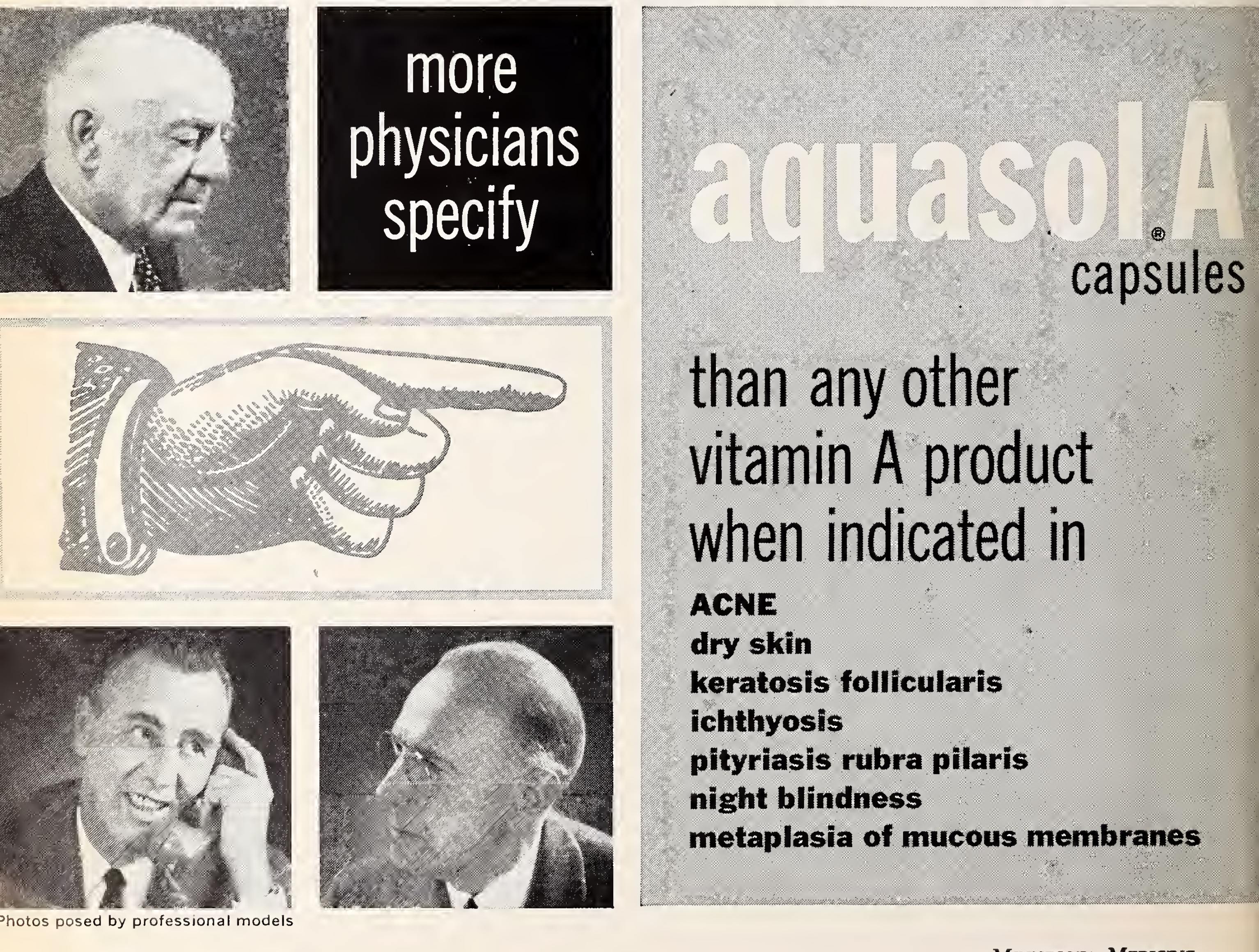
FEBRUARY

Medical College of Georgia Postgraduate Course "Growth & Development—Management of Common Behavior Disturbances"—February 12-14 Augusta, Georgia. Contact: Claude-Starr Wright, M. D.; Medical College of Georgia.

American College of Chest Physicians Seventh International Congress, New Delhi, India, February 20-24. Contact: Murray Kornfeld; 112 E. Chestnut; Chicago.

University of Colorado Medical School Postgraduate Course "Management of Trauma" February 27-March 1 in Denver. Contact: University.

University of Iowa Postgraduate Conference "Refresher Course for the General Practitioner" February 12-15. Contact: John Gius, M. D.; College of Medicine, Iowa City.



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ANNOUNCEMENTS

University of Minnesota medical continuation courses; January 7-11 Introduction to Electrocardiography; January 7-11 Proctology, February 4-8 Internal Medicine; February 11-16 Neurology. For further information write 1342 Mayo Memorial, University of Minnesota, Minneapolis.

* * *

The Association of American Medical Colleges will accept applications from medical students for grants which will enable them to broaden their medical knowledge and know-how by serving at remote medical stations in Africa, Asia and Latin America. Closing date for filing applications is December 31. Instructions and application forms may be secured from the deans of the medical schools.

* * *

American College of Chest Physicians offers three cash awards for the best contribution prepared by undergraduate medical students on any phase of diagnosis and/or treatment of chest diseases. Write: Murray Kornfeld; 112 E. Chestnut St.; Chicago.

American College of Physicians Postgraduate Courses offered:

January 21-25—Diseases of the Blood Vessels and Thromboembolism—Cornell University Medical College and New York Hospital, New York.

February 11-15—"Modern Physiological Concepts of Cardiovascular Disease," Presbyterian Medical Center, San Francisco, Calif.

March 4-8—"Physical Methodology in Medical Research," Massachusetts Institute of Technology, Cambridge, Mass.

March 18-23—"Recent Advances in Cardiovascular Diseases," The Mount Sinai Hospital, New York, N.Y.

* * *

Next examination for Certification in Occupational Medicine will be held March 16-18. Sheraton-Park Hotel, Washington. Applications for certification should be sent to Tom Whayne, M.D.; 4219 Chester Ave.; Philadelphia.

* * *

Next schduled examination (Part II) oral and clinical of the American Board of Obstetrics and Gynecology will be held at Edgewater Beach Hotel, Chicago, April 29-May. Notices will be sent candidate of exact time.

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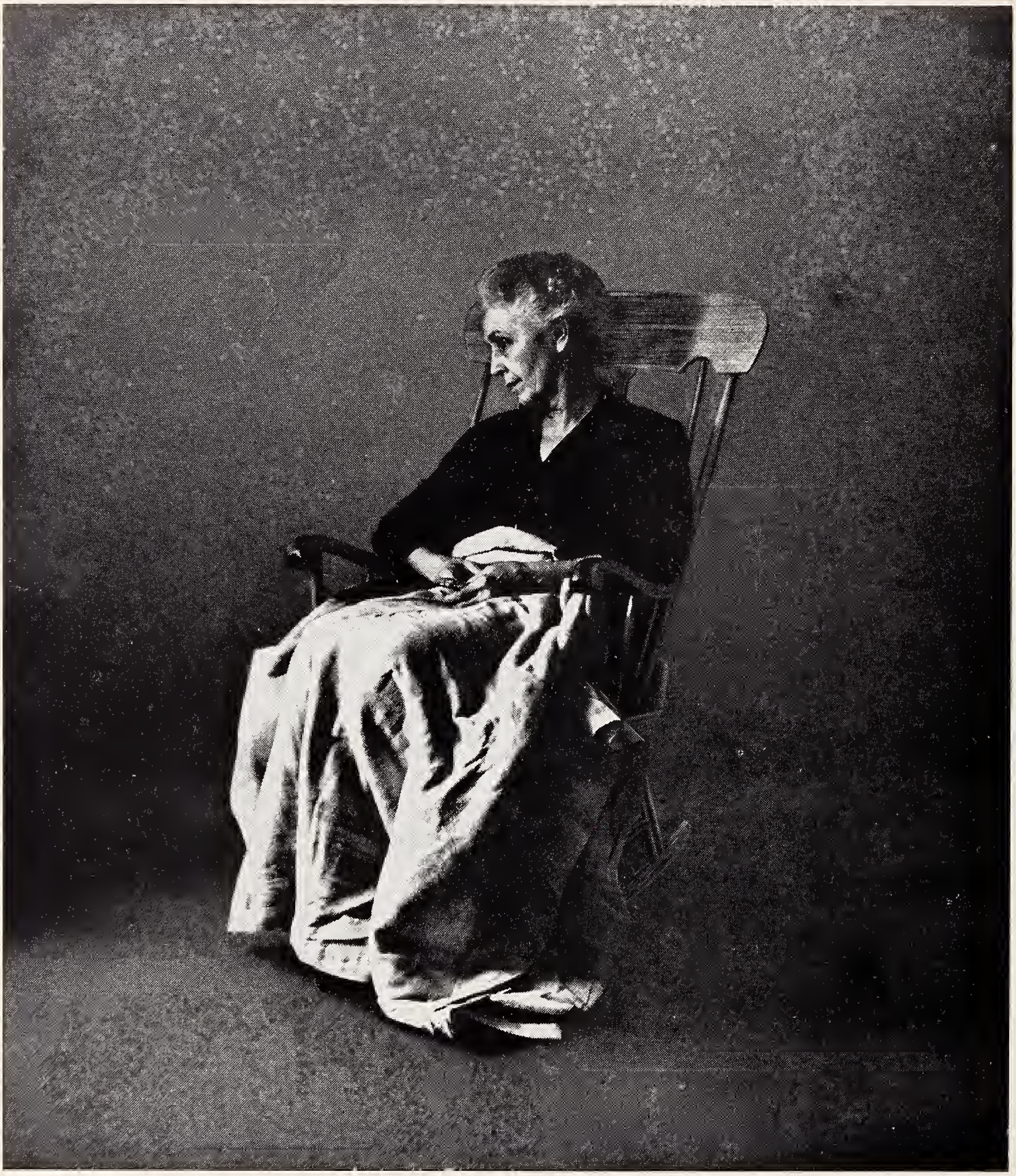

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Medicine IN WRIGHT COUNTY, Part IX

JOHN J. CATLIN, M. D.
Buffalo, Minn.

ROBERT ROSENTHAL, M. D.
St. Paul, Minn.

Albert G. Moffatt, practiced in Howard Lake from 1895 to 1929. He was born in the province of Ontario, Canada, September 5, 1865, the son of James and Caroline (Pratt) Moffatt. In 1883 he brought his family from Canada to Pembina County, North Dakota. His medical studies commenced in 1892; he graduated in 1895 from the Homeopathic College of Medicine and Surgery of the University of Minnesota. He went immediately to Howard Lake and opened an office. In 1907 he took a post-graduate course at the Cook County Hospital at Chicago. For several years he was a homeopathic member of the State Board of Medical Examiners; he was vice president of the Minnesota Homeopathic Society and director and chairman of several important concerns.

Dr. Moffatt was well liked and successful as a physician during the thirty-four years he practiced in Howard Lake. He was very civic minded; was mayor of Howard Lake, president of the Village Council, was on the school board and was president of the Howard Lake Commercial Club. For several years he was coroner of Wright County. During World War I he was in the Army Medical Corps.

He married Alice Hoffman of Canada, of Irish-German stock, daughter of John and Jeanette (Frazier) Hoffman. She died in 1889 leaving two children: Eva Thankful (Mrs. W. T. Campbell of Golden Valley, N. D.) and Julia Alberta, who became a graduate nurse and moved to Napa, California. He was married a second time to Miss Alice J. Dillon, also a Canadian from Ontario, the daughter of Robert and Alice (Hutchinson) Dillon. From this marriage, too, he had two children: Albert G., Jr. and Ralph.

Dr. Moffatt died at Howard Lake in December, 1929. His practice was taken over by Dr. H. W. Clark.

J. W. Mulvey, was in Monticello as early as June, 1857 when his card appeared in the *Monticello Times.* He continued to advertise in the *Wright County Republican* and *Northwestern Weekly Union* into 1861. At first his card read: "M. D., Physician and Surgeon, Monticello . . . office at his residence on Broadway," but later (1860) he added "County Auditor of Wright County-office over Fox and Lillibridges store - Monticello. . ."

He was born in Ireland in 1829, as he was thirty-one in 1860.* His wife, born in Canada West, must have been very young when they married, as she was only 20 and they had a two year old daughter, Mary C., in 1860. Nothing more is known about him.

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*1860 census records of Wright County, Minn.

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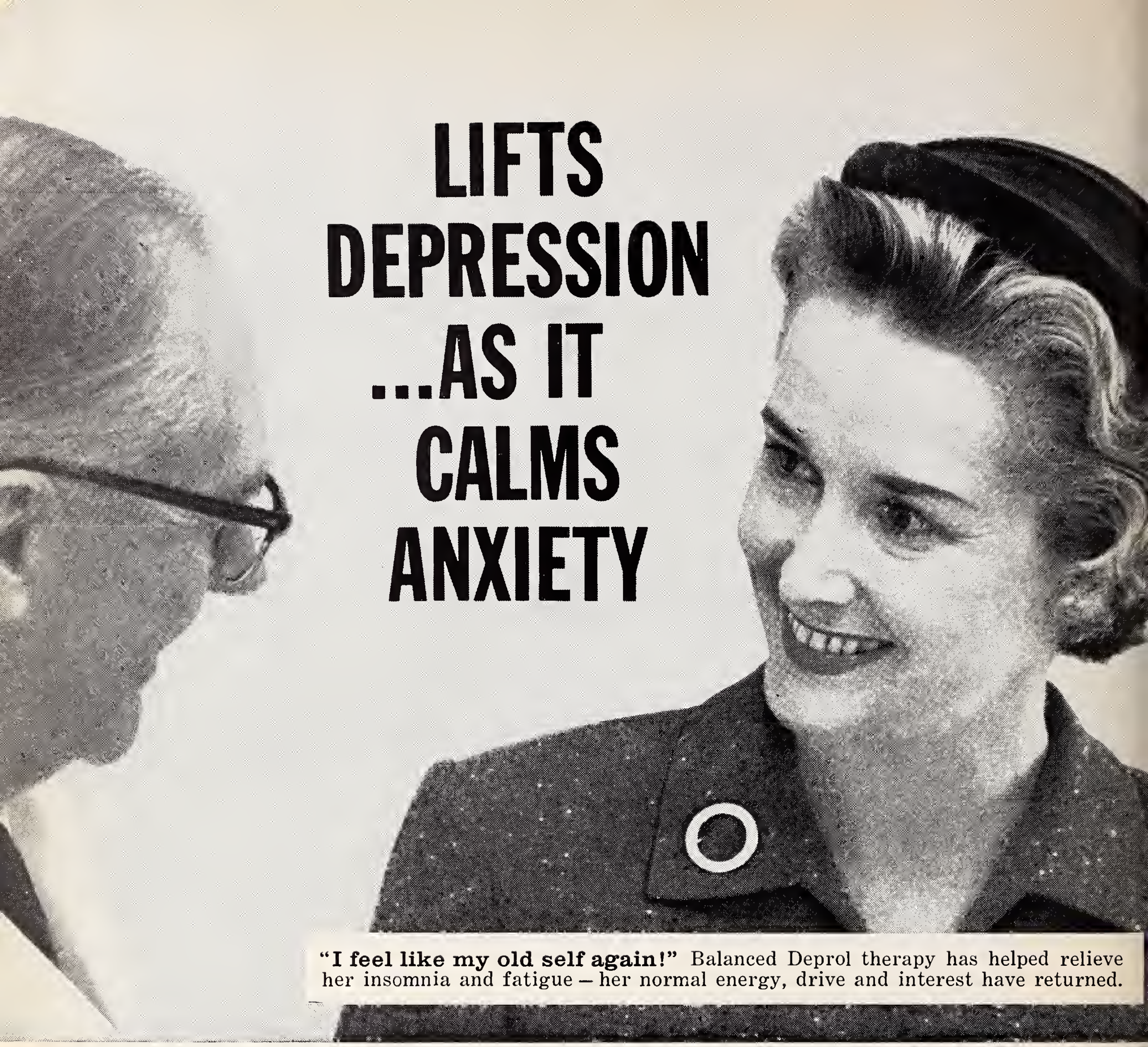

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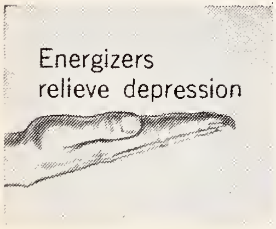
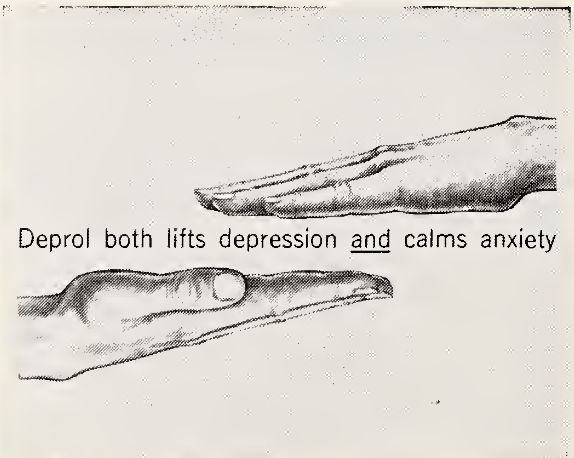


Energizers relieve depression

Tranquilizers reduce anxiety



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Supplied: Bottles of 50 light-pink, scored tablets.

Write for literature and samples.

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Leland H. Munger, practiced in Clearwater from at least 1886** through 1890. He was one of three physicians there during this period (in 1886 there were besides him, Drs. Hubbell and Wheelock, in 1890, Drs. Edmunds and Tollington). Clearwater was a small town of only 350 to 400 people, and, therefore, one can assume that the physicians engaged mainly in rural practice.

Dr. Munger was born in 1857 and was a graduate of the Missouri Medical College, St. Louis, Missouri, in 1879. He may have been in Stearns County before he moved to Eyota,† Olmsted County, in 1881. After a few months he left Eyota to settle in St. Charles and then in Winona,‡ both in Winona County. When he was licensed in Minnesota December 8, 1883, he gave his location as Fair Haven, Stearns County, and practiced there again between 1890 and 1895 after about four years in Clearwater. From 1896 on we find him again in Winona where he remained through 1912 (he is no longer listed in 1914).

In 1883, while practicing in Fair Haven, Stearns County, he was a charter member of the Crow River Valley Medical Society (the forerunner of the Wright County Medical Society), and was a signer of its Articles and By-laws. It seems he was quite active in this first society; he was elected second vice president. In 1884 he presented clinical reports on some cases of pneumonia. In the same year he was appointed deputy coroner for Wright County.

Thomas H. Murray, practiced in Rockford for a couple of years, 1900 to 1902.# Reports indicate that he was a competent and successful doctor and had a good following among the rural population of the east end of Wright County. He was a graduate of the College of Physicians and Surgeons, St. Louis, Missouri, 1898 and was licensed in Minnesota April 12, 1898. In 1909 he was in Waconia.

George W. Nichols, was listed in Monticello in 1869 but no longer in 1898. He was a graduate of Castleton Medical College, Castleton, Vermont, 1861. He is no doubt identical with the Dr. Nichols who came to Minnesota in 1871, locating in Rochester.## Soon he became a member of the Olmsted County Medical Society and the State Medical Society. It seems he could not stay very long in one place. In 1879 he moved to Whapeton, South Dakota; in 1883 to Minneapolis, and a few months later to Belle Plaine, Scott County.* In December, 1883, he came to St. Paul and from 1887 to 1891 he practiced in Merriam Park, Ramsey County, and from 1892 to1896 in Wood Lake, Yellow Medicine County.** Later we find him in Mille Lacs County and in Hinckley, Pine County. Finally he moved to California where he died.

Continued

**According to a St. Cloud newspaper item of January 24, 1884 Dr. Munger of Fair Haven intended to move to Clearwater and to locate there.

†"History of Medicine in Winona County," **Minnesota Medicine**, August, 1940, p. 578.

‡Nora H. Guthrey "Medicine and its Practitioners in Olmsted County Prior to 1900," **Minnesota Medicine**, April, 1951, p. 347-48.

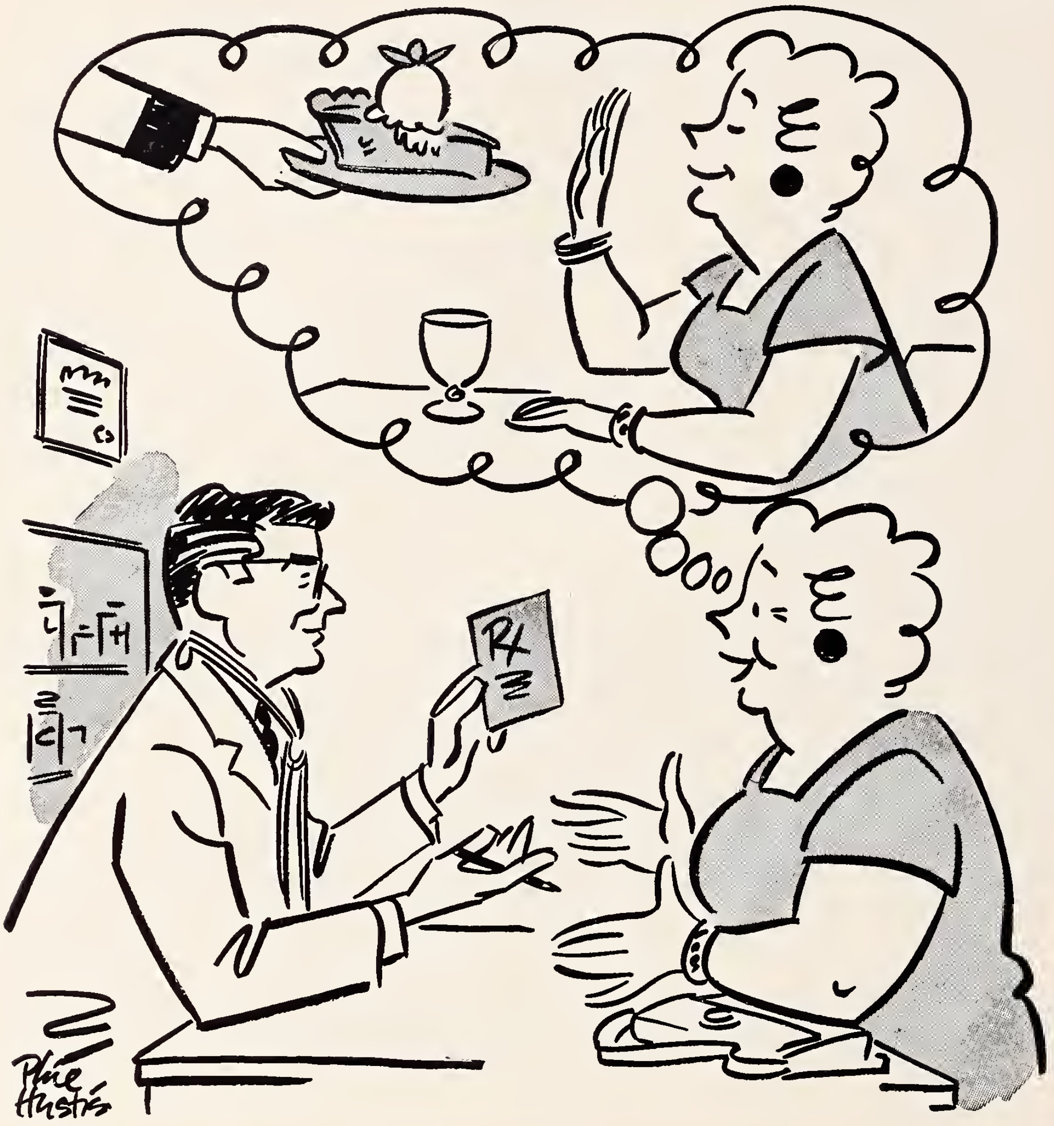
#According to other information he was in Rockford between 1903 and 1905.

Nora H. Guthery "Medicine and its Practitioners in Olmsted County prior to 1900," **Minnesota Medicine**, April, 1951, pp. 348-49.

*The Medical History of Scott and Carver Counties, **Minnesota Medicine**, 1948, fails to mention him.

Mildred B. Lee "Medical History of the County of Yellow Medicine," **Minnesota Medicine, March, 1954, pp. 222-23.

...WITH 'METHEDRINE' SHE CAN HAPPILY REFUSE!



Controls food craving, keeps the reducer happy — In obesity, "our drug of choice has been methedrine . . . because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West.J.Surg. 59:238 (May) 1951.

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Literature available on request.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

A. A. (Aaron A.) Noyes, practiced in Monticello in 1883 and 1884. He graduated from the University of Iowa Medical College at Keokuk, Iowa in 1850. In Minnesota he was licensed in 1883 (he filed his license in Wright county November 24 of that year).

He was located in Mason City, Iowa when he came to Monticello in 1881 to look for a new location, but he did not stay at that time. In the fall of 1884 he had made up his mind to leave Wright County, and sold his home to Elder Brooks.† Early in October he and his family left for St. Cloud, Stearns County. Later he moved back to Mason City. Dr. Noyes apparently was interested in farming or cattlebreeding; early in 1886 he had plans of returning to Wright County and "buying a piece of land for his Jersey bulls."

From 1890 to 1909 he is listed in Minneapolis and then returned once more to Mason City, Iowa.

John Vincent O'Conner, was listed as practicing in Waverly Mills in 1898 and 1900 but he supposedly was there for four years. While in Waverly he married Nellie Giblen, a native of Pennsylvania and he built what is known as the Mike Padden home.

Dr. O'Connor was born in Minneapolis September 1, 1867 of Irish parentage. He received his early education in Ohio. He became an accomplished musician and taught music. With this teaching of music he earned the money to go through medical school, and he graduated from the College of Medicine and Surgery of the University of Minnesota in 1895. He was licensed June 11 of the same year.

Before coming to Waverly he practiced for a short time in Watkins, Meeker County. When he left Waverly he took a post-graduate course at the New York post-graduate Hospital and then moved to St. Paul in 1901. There he continued in general practice until his death from a short illness April 5, 1932. He was Examiner for the AOH and the Union Central Life Insurance Company. Dr. O'Connor was a charter member of the St. Paul Lodge of Knights of Columbus. He was survived by his wife and five children: Gerald, Emmet, Donald, Edna and Gertrude.

Timothy O'Connor, was listed in Maple Lake from 1893 through 1898 as the only physician there. In 1900 he was one of two physicians — the other was Dr. Daignault.

Dr. O'Connor was born in Union City, Ohio October 24, 1854 His parents were Timothy and Margaret (O'Neil) O'Connor, farmers in French Lake Township. He came to Wright County with his parents and farmed until 1884. When he decided to take up medicine he at first "read medicine" with Dr. E. Y. Chilton of Howard Lake and then entered the Medical School of the University of Minnesota in 1887 and graduated in 1890. After his graduation he practiced with Dr. James N. Dunn of Minneapolis. After that he returned to Howard Lake to practice for six months with his preceptor Dr. Chilton. Then he moved to Maple Lake. That probably was in 1891 as he is supposed to have practiced there for thirteen years when he left September 24, 1903. The heavy strain became too much for him, and, therefore, he and his wife moved to Denver, Colorado, on the advice of his physicians because they thought the climate there would be better for him. He died in Denver December 11, 1903.

Dr. O'Connor was a charter member of the Wright County Medical Society when it was reorganized in 1894 and again in July, 1903. Following his death a resolution honoring his memory was spread upon the minutes of the society.

Dr. O'Connor left a record as a public spirited citizen and a fine physician. He was mayor of Maple Lake for several years.* When Dr. J. J. Catlin made trips into Dr. O'Connor's old rural territory he heard much praise from his patients.

---

*Obituary in **Minnesota Medicine,** May, 1932.

†He had invested in the Elder Brooks property when he came to Monticello.

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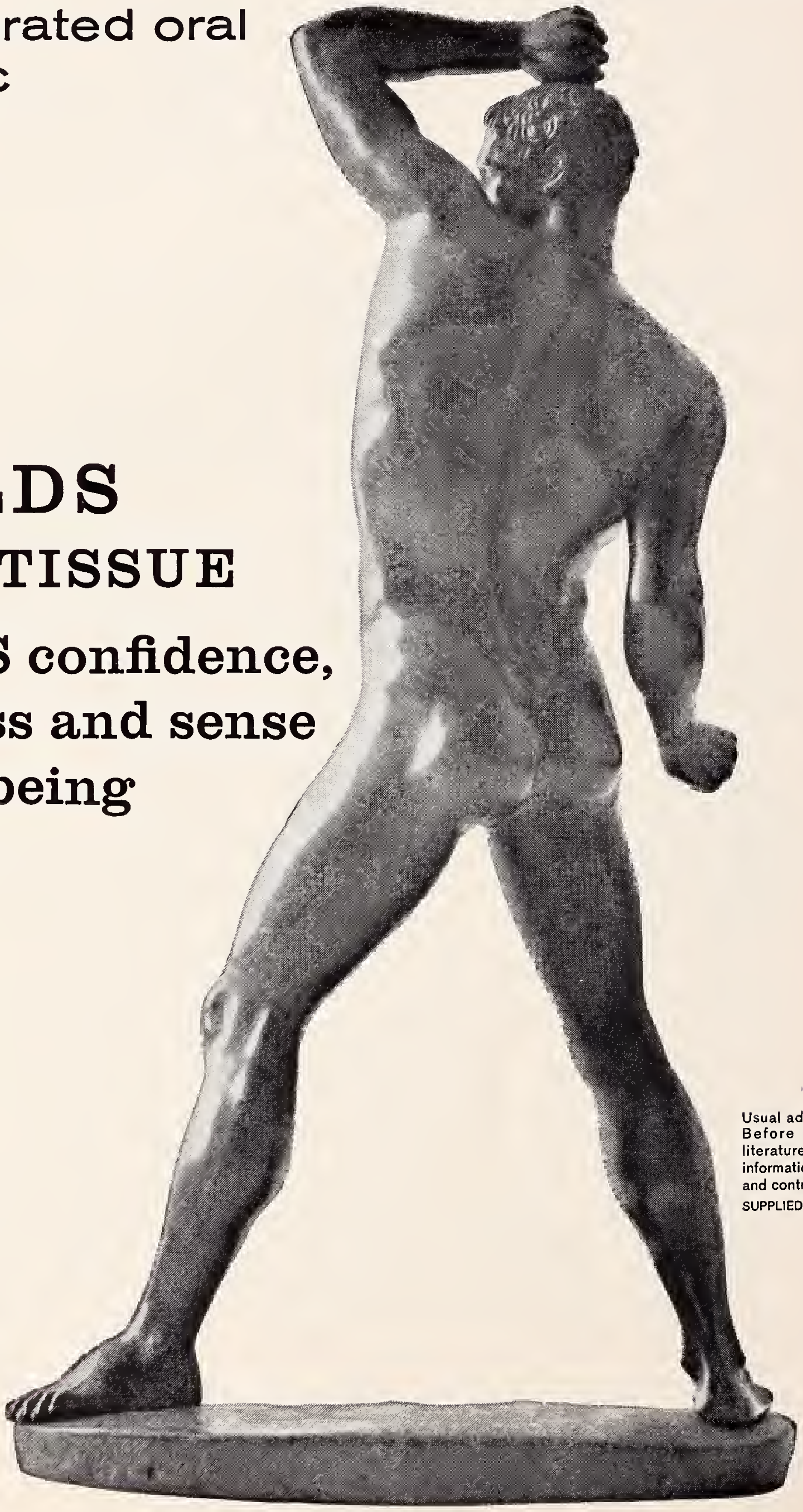

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Physician's Diary

"Reminiscences of a Mayo Clinic Surgeon, 1920-1960" is the title of an illustrated book written by **Dr. Waltman Walters,** emeritus senior surgeon of the Mayo Clinic.

* * *

The St. Barnabas Hospital Auxiliary held its Volunteens party at the hospital's nurses home. Silver Bee charms were given to 23 of the girls who exceeded the required number of hours.

* * *

Jackson recently dedicated a new municipal hospital with **Dr. W. H. Halloran** speaking on behalf of the Jackson medical doctors.

* * *

Dr. Corrin H. Hodgson, specialist in internal medicine at the Mayo Clinic was elected president of the Minnesota Medical Foundation, Inc. a non-profit organization of physicians and laymen serving the University of Minnesota Medical School. **Dr. Vernon D. E. Smith,** St. Paul, was elected vice president and **Dr. N. L. Gault, Jr.** was elected secretary-treasurer.

* * *

Dr. Glenn Brown of Halstad Recently attended as a delegate the American Academy of General Practitioners meeting in Minneapolis.

* * *

Dr. Glenn Brown of Halstad Recently attended, as a delegate, the American Academy of General Practitioners physician to the bishops at the Second Vatican Council of the Roman Catholic Church in Rome.

* * *

Doctors L. A. Laikola and **Donald E. Nealy** are building a new Adrian Medical Clinic.

* * *

The Board of Directors of Community Memorial hospital in Spring Valley announced the appointment of **Drs. C. E. Peterson, Lowell Smythe** and **John Todd** of Austin and **Dr. C. W. Baars,** of Rochester to the hospital staff.

* * *

Dr. Reuben Berman of Minneapolis recently spoke on Cardiac Arrhythmias Including Cardiac Standstill at the meeting of the Southwestern Minnesota Medical Society in Worthington.

Dr. Guy O. Johnson, Bayport, attended the U. S. Army Medical Field Service School of the Brooke Army Medical Center at Fort Sam Houston, Texas to study Aerospace Medicine for Flight Examiner Training.

* * *

Dr. Alvan Sach-Rowitz, Moose Lake, was one of the winners of the Pfizer Merit award for outstanding voluntary non-military civil defense work. This is an award given by the United States Civil Defense Council.

* * *

Dr. James T. Priestley, chairman of the Board of Governors of the Mayo Clinic, was elected chairman of the Board of Regents of the American College of Surgeons.

* * *

Dr. and Mrs. Merrill D. Chesler of Minneapolis returned recently from the Orient where they attended the meetings of the American Society of Plastic and Reconstructive Surgery and the Japanese and American Societies of Plastic Surgery.

* * *

Dr. Robert L. Vernier, assistant professor of Pediatrics, University of Minnesota Medical School, was among the three winners of the Mead Johnson Company awards for outstanding research contributing to child health.

* * *

Dr. Walter R. Ramsey of St. Paul was honored on occasion of his 90th birthday recently. He was the first full-time pediatric specialist in this part of the country and the founder of the Children's Hospital of St. Paul.

* * *

Luverne's new addition to the Community Hospital will be named after **Dr. C. L. Sherman,** a most deserving tribute to a great doctor.

* * *

New Locations: Dr. R. Richard Laurence Dobbs of International Falls will join ENT the department of the Duluth Clinic . . . . **Doctors Ronald Beck and Donald Pearson** have begun practice in Lamberton.

* * *

The Minnesota Academy of Medicine recently celebrated its 75th anniversary with special speeches by **Dr. Wallace Cole** of St. Paul and **Dr. S. Marx White** of Minneapolis.

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[1] Stevenson, L.E.: M. Ann. District of Columbia *30*:409 (July) 1961.

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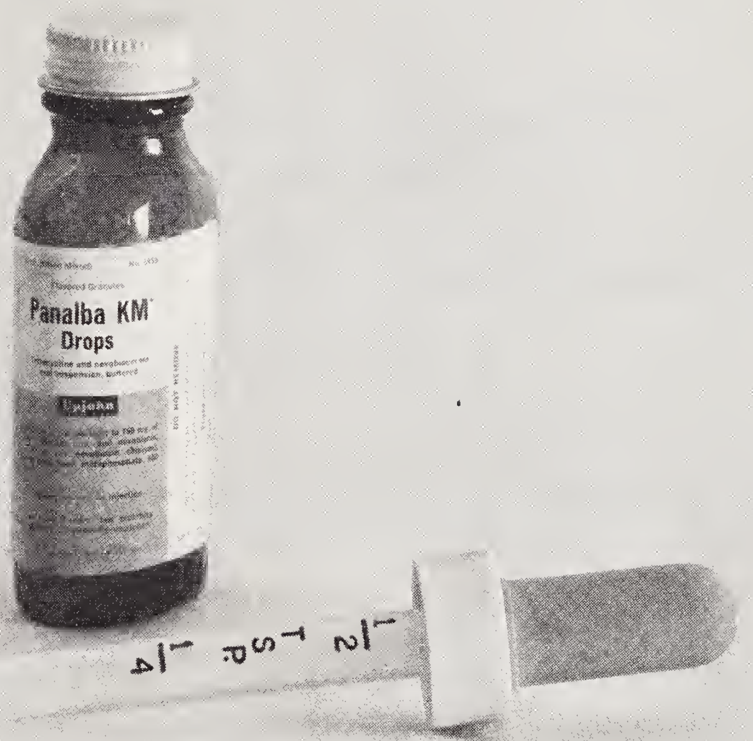

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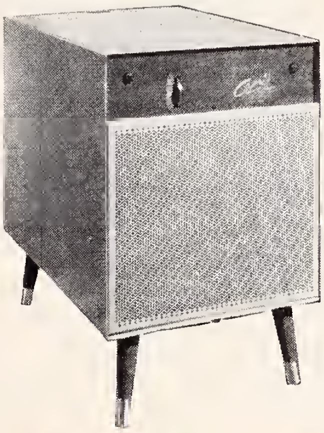

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Henry J. Tumen, M. D., Philadelphia, Pa.
Gastroenterology
Logan T. Robertson, M. D., Asheville, N. C.
General Practice
Andrew A. Marchetti, M. D., Washington, D. C.
Gynecology
Raymond D. Pruitt, M. D., Houston, Tex.
Internal Medicine
Paul S. Rhoads, M. D., Chicago, Ill.
Internal Medicine
C. H. Hardin Branch, M. D., Salt Lake City, Utah
Neuropsychiatry
J. Robert Willson, M. D., Philadelphia, Pa.
Obstetrics
James I. Moore, M. D., Baltimore, Md.
Ophthalmology
James E. Bateman, M. D., Toronto, Ont., Can.
Orthopedic Surgery
Joseph H. Ogura, M. D., St. Louis, Mo.
Otolaryngology
Edward A. Gall, M. D., Cincinnati, Ohio
Pathology
Weston M. Kelsey, M. D., Winston-Salem, N. C.
Pediatrics
Curtice Rosser, M. D., Dallas, Tex.
Proctology
Ted F. Leigh, M. D., Atlanta, Ga.
Radiology
John L. Keeley, M. D., Chicago, Ill.
Surgery
John L. Madden, M. D., New York, N. Y.
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Edwin P. Alyea, M. D., Durham, N. C.
Urology

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